R5025-1.18F 7/87

Inflation Stabilization With Incomes Policy Support

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New York & London

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The paper by Rudiger Dornbusch and Mario Henrique Simonsen was presented at a Plenary Meeting of the Group of Thirty in New York in October 1986. The contributions by Mario Brodersohn, Michael Bruno and G G Johnson are based on their interventions in the discussion at that meeting. Publication does not imply endorsement by the Group of Thirty of any views expressed.

Inflation Stabilization With Incomes Policy Support

A Review of the Experience in Argentina, Brazil and Israel

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Published by
Group of Thirty©
New York
1987

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Printed in the United States of America.

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Inflation Stabilization with Incomes Policy Support*

I. Introduction

In 1985–86 Argentina, Brazil and Israel initiated programs of stabilization after episodes of high and sharply accelerating inflation. Among the key features of each stabilization program were the use of wage-price controls, a fixed exchange rate and fiscal correction as well as a significant expansion in the nominal quantity of money. The combination of fiscal correction and incomes policy has come to be known as "heterodox" stabilization policy, thus opposing it to the conventional IMF programs which emphasize tight monetary and fiscal policies as the exclusive instrument of stabilization.

The stabilization programs in Argentina and Israel have now been in force for over a year and the more recent one in Brazil for half a year.** There is accordingly enough evidence to make a first judgment on the successes and the limitations of these new schemes. At the same time it is worthwhile spelling out some of the special features of stabilization and the resulting intellectual case for heterodox programs. We leave little doubt that the concept of these new programs is entirely correct — a longstanding disdain for controls by the economics profession notwithstanding. But we also emphasize that the temptation to forget about fundamentals is extraordinarily great and ultimately fatal to stabilization.

A main point of our paper is to isolate the precise role these programs can expect to play. Our point is that they provide an immensely valuable *breathing spell* in which price stability can be established without deep recession. As a result the very strong political support for the program and the policy maker yields a platform from which to make the inevitable adjustments in the budget which are the ultimate pillars of stabilization. We note that mistaking the breathing spell for success, and failure to use the political support at its height for the difficult task of fiscal correction, will mean that the program must soon slip. And when it does slip it does so irrecoverably. The focus then is on how these programs, unlike traditional programs, do provide an immediate, temporary and very favorable opportunity for basic policy reform. Even if they do not provide a magic relief from the necessity of fiscal correction they surely represent a significant opportunity to try to achieve policy reform. Before, in innumerable cases, that proved impossible or was overly delayed because of the perception of immense political costs associated with large unemployment and slow disinflation.

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* We are indebted to Stanley Fischer, Eliana Cardoso, David Holland and participants of the Group of Thirty meeting for helpful discussions and suggestions.

** This paper was prepared for a Group of Thirty meeting in October 1986. All statistical information is that available in September 1986.

Table 1 gives an idea of the possible and impossible approaches to inflation stabilization. The table highlights two dimensions of policy: whether or not the program includes fiscal correction or austerity and whether the program has an incomes policy (wage, price and exchange rate freezing together with remonetization to be explained below). The standard program in the lower lefthand box is the IMF approach which consists of fiscal austerity but does not make incomes policy a key instrument. It is true that the IMF favors wage restraint, but price controls are not typically, or ever, an item on the conditionality list. The alternative is shown in the upper lefthand box where the heterodox programs are located. They combine an incomes policy with fiscal austerity.

Table 1

Orthodox, Heterodox and "Nodox" Stabilization

		FISCAL AUSTERITY	
		Yes	No
INCOMES POLICY	Yes	Austral/Cruzado	Poets
	No	IMF	Magicians

The remaining two boxes are essential to an understanding of what the temptations are in the course of stabilization and where they lead. The most common is to attempt stabilization by controls only, without paying attention to the *sine qua non* of fiscal correction. This box is crowded with many thousand years of failed experiments from Emperor Diocletean to the modern day experiments of the Peronists in 1973-4, of Richard Nixon, or of Israel in early 1985. Inevitably these programs come to an end after a more or less brief period of effectiveness. They fail when shortages become a sufficient political headache. There may be an additional phase in which magicians get a shot, without controls and without austerity, but that is typically the final phase before the patient, often too late, is rushed to the IMF.[1]

An important point in Table 1 concerns monetary policy. The heterodox program includes significant monetization as part of stabilization, but recognizes the need for fiscal austerity. By contrast the orthodox IMF program emphasizes monetary and fiscal restraint.

There is another dimension along which programs might be distinguished in four-way classification. Programs might be orthodox or heterodox and they can involve gradualism or shock treatment. In this dimension the present programs are classified as "heterodox shocks." An example of a heterodox-gradualist program would be the Brazilian Campos-Bulhões stabilization of the 1960s. An orthodox-gradualist program might be the case of Chile. It is more difficult to remember an orthodox-shock example, perhaps because of a lack of survivors to recount the episode.

The paper is organized as follows: In the first three sections we review conceptual issues related to the use of incomes policy in the context of stabilization when inertia is a central feature. The discussion includes the relation between deficits and inflation, inertial inflation and the basics of monetary reform. In the following three sections we review the actual stabilization experience in Argentina, Brazil and Israel. The paper concludes with a discussion of the political dimension of stabilization, showing the extraordinary political popularity of the new programs.

II. Incomes Policy and Stabilization

In this section we review the analytical case for wage-price-exchange rate controls as an essential complement to the fiscal stabilization that, as already noted, is the *sine qua non* of successful anti-inflation policy.

That aggregate demand discipline is a necessary condition for sustained price stability has long been known by economists and by well advised policy makers. Yet it may not be sufficient to stop inflation, or at least it may fail to work under conditions of tolerable unemployment. This is demonstrated by the failure of a number of IMF-supported programs that ignored the problem posed by inflationary inertia. As a result IMF programs often lead to dismal stagflation and ultimately to a resumption of expansion and little success at definitely reducing inflation. Not surprisingly, countries like Argentina, Israel and Brazil recently decided to focus on the supply side of inflation, attempting to stabilize prices by combining incomes policy with "monetary reforms."

Whether these experiments will ultimately yield success stories depends on a number of factors, including importantly aggregate demand management. The overriding lesson from the ongoing experiments certainly include the need for sound respect for fiscal discipline and the need to recognize that a good dose of initial overkill may be an inevitable ingredient for subsequent success.

One interesting issue is that such experiments were inspired by a sound game theoretical approach to inflation. It can be argued, as we do below, that an incomes policy is necessary to coordinate individual behavior in a way not recognized by oversimplified versions of a rational expectations economy. The central problem is to understand what causes inertial inflation and how incomes policy can break the dependence of the inflation rate on its past behavior.

Inertial Inflation: The starting point for the discussion is the recognition that a large part of any prevailing inflation is essentially *inertial*. This observation applies equally to the United States, Europe or Latin America. Inertial inflation means that inflation today is approximately equal to what it was yesterday. Let p be the current inflation, p_{-1} last year's inflation and "Gap" denote the economy's cyclical position. The actual rate of inflation would then be:

$$p = p_{-1} + a\text{Gap} + e$$

where e denotes current period supply shocks. The essential point of modern inflation theory is the recognition that inflation is linked to the past through a variety of channels. It is not only "too much money chasing too few goods," which is the second term, or supply shocks like oil or agricultural price increases, but also the sheer fact that inflation yesterday means inflation today.

The reason for this persistence or inertia is primarily formal or informal indexation interacting with staggered wage setting. This may take the form of a legally imposed wage rule according to which wage adjustments today are based on the inflation over the past year or the past six months.[2] It may also be that much more informal wage bargaining may lead to the same result. Other than through wage indexation the same mechanism also works via expectations. In setting their prices firms will have to estimate their own cost increases and the price increases of competing firms. The best guess is that, cyclical and supply shock factors aside, inflation today will be approximately what it was yesterday.

Because everybody believes that inflation will in fact be approximately what it was yesterday the public acts on these expectations and will therefore set their prices accordingly and will not hesitate to give wage concessions matching these inflation expectations. It is much easier to give wage increases in line with expected inflation than go through the risk of a strike. If everybody acts in this manner then in fact the expected inflation turns out to be the actual inflation; and if yesterday's inflation is the benchmark, then today's inflation will come out to be much the same as it was in the past.

Cyclical factors and supply shocks, including the need to depreciate exchange rates to cope with the debt crisis, are the chief reasons why inflation has exploded in many countries. The inertial part of inflation, other things equal, would tend to make for very stable inflation, at some particular level. But the extra elements can cause inflation to move, and often to move sharply. The cyclical factor is quite obvious in that it is simply demand inflation or cooling down of inflation due to slack in activity and employment. But it is worthwhile to recognize an asymmetry. There is no upper limit for firms' price increases in response to excess demand, but in reverse the argument does not apply. Stopping inflation of say 400 percent by slack is very difficult. Even as restrictive policy cuts nominal spending, firms are forced in the labor market to make wage concessions based on past inflation. Their cost increases thus might be of the order of 400 percent and it is quite inconceivable that simply by reducing profit margins they would be able to reduce inflation significantly.

In the same way a cut in wage settlements below the prevailing rate of inflation will not make much of a difference to high inflation. Giving wage increases of 360 instead of 400 percent would mean a very large cut in the real wage (8 percent!) but a very minor reduction in inflation.

The idea of fighting inflation by slack thus applies only to an economy where wage reductions of 2 or 3 percent or cuts in profit margins of that order mean cutting inflation in half. When inflation is very high and very inertial then demand policies have a hard time making a rapid and large impact. Because a rapid and large impact is the only way that is politically acceptable, governments in high inflation countries see little hope but to try and stem further inflation deterioration, but do not see room for actually ending inflation.

The new stabilization programs recognize this problem in a way that IMF programs do not. They recognize the need for an incomes policy as a means of suspending the inertial forces, thus shifting the economy instantly from a high inflation state to a low one. This incomes policy should be understood in two ways. One is political. To stop inflation someone must start offering either cuts in profit margins or in real wages in order to introduce disinflation. The initial disinflation can then be passed along through indexation into a gradual path of further disinflation. Realistically, there will be no volunteers for such an approach. Everybody would like to jump to a low inflation state together, but nobody will jump unless the others do also. That means everybody wants to see the fact of zero inflation before they themselves will set their own price or wage increases at zero. But if everybody adopts a "wait and see" attitude then, of course, inflation will continue. An attempt to restrict demand would translate almost entirely into reduced employment and practically not at all into lower inflation. The dismal performance of the economy and the lack of success at inflation fighting would make any such campaign short-lived.

Game Theory and Incomes Policy: The scenario thus described puts inflation fighting squarely in the area of game theory. When economic agents interact strategically in the fashion described above coordination becomes essential to achieve good results. A system of wage-price-exchange rate controls is the coordinating device that recognises the fact that the economy left to itself cannot stabilize quickly except at extreme costs. It might be argued that if the government does undertake to produce the right kind of monetary and fiscal policy, then the public cannot escape the conclusion that, in fact, inflation has been left dead in its tracks. Unable to escape that conclusion, everybody will act on it and hence inflation will be dead.[3]

But there are two separate and crucial slips in this argument. One concerns the government's inability credibly to precommit future policies. The other, which is more novel, concerns the problem of coordination in a world of price setters. We review these in turn.

The government cannot commit itself definitely, credibly and beyond doubt. The institutional setting for such a precommitment does not exist (one thinks of constitutional amendments, the gold standard and what not). Because the government cannot lock away beyond doubt its policies, the public always recognizes that there is some possibility that policy will not change to a non-inflationary stance. Specifically, if the average agent does not quite believe that policy will change, then they all will behave somewhat defensively, charging some wage and price increases which then force the government to suspend the policy. The expectation that this is indeed the policy persuades the average agent to disbelieve the possibility of an instant end to inflation.

These ideas can be interpreted in a game theoretic perspective by assigning the government a double task: to assure the credibility of an aggregate demand policy consistent with disinflation, and to coordinate the expectations and actions of individual wage and price setters. Assume that after a prolonged inflation, the Central Bank announces that it will stop printing money and that the Treasury announces that the budget deficit will be eliminated as a result of increased taxes or expenditure cuts. Even if the general perception is that nominal GNP will be stabilized immediately, prudent price setters should not take the lead in stopping sectoral price increases, as long as they consider the possibility of further price increases in other sectors.[4] In a non-cooperative or non-coordinated game with many players each individual player has little information on other players' pay-offs. As a result there is no reason to believe that all players will hit the zero inflation-full employment equilibrium in the first move of wage and price setting. The uncertainty about the behavior of other players persuades the individual price setter to adopt a very cautious pricing policy.[5] How many moves it takes or how long it takes for the economy to reach the equilibrium is an open question, depending in part on the learning mechanism used by individual agents.

The convergence speed may be painfully slow after a prolonged period of high inflation. The more prolonged the period of learning, the higher is the unemployment rate that results from excessive prices confronted with a given nominal income target sustained by the stabilization policy. The higher and the more persistent is unemployment the more agents will be inclined to believe that the authorities' determination may falter. Accordingly, rather than speeding up their price responses, they may persist even longer in their overly prudent disbelief.

The foregoing discussion provides the rationale for an incomes policy: governments should play the role of the Walrasian auctioneer, speeding up the location of a zero-inflation full employment equilibrium. From this point of view, incomes policy may be necessary to make economic agents behave in line with rational expectations models. It should be stressed that the central function of controls is not to constrain individual decision-making, but to tell each agent how other actors will play, clearing potential externalities in an imperfect information game. This role for controls, incidentally, dismisses a traditional argument against incomes policy, namely that governments are not better equipped than the private sector to discover the equilibrium. In fact, the central problem is not to identify the equilibrium but to orchestrate the simultaneous playing of wage and price setters to reach the equilibrium.

Transition: A more fundamental contention is that the temporary success of an incomes policy may lead policy makers to forget that price stability can only be sustained with aggregate demand discipline. The temptation is to misread the price stability and produce a boom. The misleading signals are a true risk as is known from uncountable examples in history. Yet the converse is also true. Trying to fight a big inflation from the demand side only may lead to such dismal stagflation that policy-makers may conclude that life with inflation is less uncomfortable than life with an IMF-supported program. Worse yet, they often reach that conclusion only after a prolonged period of recession.

Of course, the chances of hitting instantly a zero-inflation, zero unemployment, zero shortage equilibrium via an incomes policy are remote. Wage-price controls will almost inevitably lead to some shortages unless there is a generalized recession that cuts demand. The central question is what is worse in terms of social welfare, a few product shortages that may eventually be overcome by imports or a generalized shortage of jobs. From this point of view, objections to an incomes policy should be balanced against the extreme costs of recession and unemployment. This is especially the case when the problem is to fight a big inflation with strong inertial roots. One reason to prefer an incomes policy is that it can in principle be managed with appropriate flexibility, across sectors and across time, moving gradually from price freezes to price administration.

The case for a coordinating role for an incomes policy because of information externalities arises only when macroeconomic noise and uncertainty are large relative to the microeconomic uncertainties in each individual market. This explains why, in a second stage of the stabilization program, wage-price controls should be removed gradually, in successive sectoral steps and not in a one-shot manner. The one-shot approach would simply bring back the uncertainty of individual players as to what every other player will do. As a result at the stage of liberalization there would be defensively large price increases which might well wreck the inflation stabilization.

Incomes Policy Matching: We conclude this section by noting that the various instruments of an incomes policy: exchange rates; wages; public sector prices and the nominal money stock, must be carefully matched. Failure to align these policy instruments can easily lead to dramatically poor performance.

The clearest example of a poorly aligned policy might be the Chilean stabilization of the late 1970s. The budget had been moved to balance and indeed to a surplus. Money was under tight control and inflation was gradually declining, although very slowly. To speed up disinflation the government opted to stop the exchange rate depreciation that had previously been used to avoid loss of competitiveness in the face of continuing inflation. But the government failed to recognize that wage indexation, geared to the past inflation, implied cost increases for firms without providing offsetting relief on prices. The exchange rate soon became grossly overvalued, leading ultimately to the worst kind of speculation and financial instability.[6]

The need for a matching of instruments applies also to the money stock. As we will discuss in the next section successful disinflation requires determined (though careful and limited) monetization of the economy.

III. The Budget and Inflation

The common perception is that inflation is caused by budget deficits. We draw attention here to two important channels that run in the other direction: *Budget deficits are high because of inflation.* This more unusual direction is important in assessing public finance in inflationary episodes and to develop a judgment about the fiscal policy changes required in implementing stabilization.

The first reason inflation makes for deficits is often called the Oliveira-Tanzi effect.[7] The fact of inflation, combined with lags in tax collection, implies that the *real* value of tax collection arriving in the hands of the government is lower the higher the rate of inflation. If last year's income taxes were to be paid only this year with 100 percent inflation and without indexation of tax liabilities the government would find itself with only half of the real value of taxes it would receive without inflation or without lags or with exact indexation.

Of course, in any high inflation episode the lags in tax collection are sharply reduced and some form of indexation will make an appearance, but it turns out to be entirely impossible to make the entire tax collection *fully* inflation proof. Moreover, if inflation rates reach 20 or 30 percent per month, not to speak of the 20,000 percent in a hyperinflation situation, even very short lags have a major effect on the real value of tax collection. This effect is reinforced in that the public gains an active interest in postponing tax payments because of the large reduction in real payments that can be achieved in this manner.

The actual relevance of the Oliveira-Tanzi effect depends on the tax structure. The more it is based on withholding taxes and excise taxes, and the more rapidly these are turned over to the government, the smaller the impact of inflation. Conversely, the larger the share of income taxes, the less frequently these are collected and the less they are collected at the source, the more dramatic the impact.

An overnight stabilization of inflation thus has an immediate, often dramatic effect on the real value of tax collection. Without even changing the tax laws the fact of price stability implies that the government receives an increase in the real value of tax collection. The magnitude of this effect was of the order of 1-2 percent of GDP in the various recent cases.

The interaction of the deficit and inflation leads to another important point. Suppose the deficit is financed by printing money. In an inflationary situation there may well be more than one equilibrium inflation rate. There will be low inflation equilibrium, with a small deficit (*because* inflation is low) and a high inflation one with a larger deficit. The details are given in the appendix, but this point is critically important because it suggests that exactly the same tax structure may be consistent with very different inflation performances. It makes the possibility of shifting the economy from high to low inflation more than an academic issue.[8]

The second interaction between inflation and the deficit stems from the inflation component of debt service. Part of government outlays will be the service of the internal and external debt. Let i be the nominal interest rate, r the real rate and p the rate of inflation. Let B be the nominal stock of debt outstanding. Debt service then is equal to the nominal interest rate times the stock of debt, iB. For a given real interest rate more inflation means higher nominal interest rates and hence a higher level of outlays and of the deficit in the budget. This point is made immediately obvious by writing debt service as follows:

$$\text{debt service} = iB = (r+p)B$$

where we have used the definition of the nominal interest rate as equal to the real rate plus the rate of inflation. This link between inflation and nominal debt service has led to the recognition that two different measures of the deficit must be distinguished: the actual deficit and the inflation-adjusted or *operational* deficit. The former calculates the deficit taking full debt service as the measure of debt service while the latter only includes real interest payments, rB, and excludes the inflationary component of interest, pB. The rationale for the distinction is that corresponding to the inflation component of interest payments is the inflationary erosion of the principal. To measure the increase in the real value of government indebtedness the inflationary erosion of the debt should be subtracted from the addition to the stock of government liabilities outstanding. That is done by calculating the inflation-adjusted or operational deficit defined as the actual deficit less the inflation rate times the stock of government debt outstanding. This concept of the deficit is also equivalent to calculating the noninterest deficit plus real interest payments on the debt.[9]

The importance of inflation adjustments in the budget is apparent when we think of a government with a debt-income ratio of, say, 20 percent of GNP and an inflation rate of 200 percent. The inflationary component of debt service is equal to 40 percent of GNP. The actual deficit therefore vastly overstates the increase in the government's *real* indebtedness.

This argument applies not only to the internal debt but also to the foreign debt. The deficit contribution of external debt, in local currency, is equal to the interest rate, say Libor plus 2 percent, plus the rate of exchange depreciation times the ratio of external debt to income. If inflation is high so will be depreciation and hence the inflationary component of the service of the external debt. If inflation were brought to zero, through whatever means, the budget deficit would be reduced correspondingly.

Money Illusion: If the public has no money illusion then in the presence of inflation its extra saving will be just enough to absorb the inflationary component of debt service. How otherwise would it be possible to finance budget deficits of 25 percent of GDP? There is, indeed, a serious theoretical flaw in using unadjusted budget figures to measure supply-demand gaps. As long as an increase in the budget deficit is matched by an equal increase in voluntary private savings, aggregate demand will not be affected at all. The assumption of deficits gearing voluntary savings to finance them looks rather strange, as far as the adjusted budget is concerned. Yet, it becomes highly plausible when the problem is to finance the inflation adjustment of the public sector debt. In the case of the foreign debt this looks plainly obvious.

American creditors never increased their spending or their purchase of Brazilian goods just because Brazil was devaluing the exchange rate almost daily, in line with the domestic inflation rate, before the Cruzado Plan. The fact that they owned an increasing nominal amount of cruzeiros was not confused with a wealth increase since their claims did not appreciate in dollars or in terms of purchasing power over Brazilian goods. In a word, the cruzeiro adjustment of the Brazilian public sector foreign debt was fully financed by external creditors. Banks were reluctant to increase their dollar exposure to the country, but were not reluctant to have this exposure translated into more and more cruzeiros.

If the public has no money illusion, the same principle applies to the domestic public sector debt. Bond holders will understand that the inflation adjustment of their credits should not lead to additional consumption. Here again, inflation automatically creates the nominal savings needed to finance the inflation adjustment of the government debt.

Of course, the no money illusion assumption can be questioned, especially in the absence of formally indexed public sector bonds. Even in a largely indexed economy widows and retired workers might use part of the inflation adjustment of their savings accounts to finance consumption. Yet two essential points should be stressed. First, money illusion is not likely to be a major problem, otherwise it would be impossible to finance deficits of 25% of GDP. Second, even if money illusion is important enough to prevent the inflation adjustment of the public sector domestic debt from being financed entirely by voluntary savings, it brings us back to the Oliviera-Tanzi effect. Once again, there is a circular causation between aggregate demand and inflation. Stopping inflation will lead to an automatic reduction in aggregate demand.

These distinctions between adjusted and unadjusted deficits are important for understanding the rationale of the new stabilization programs. If a government perceives that most of the deficit represents the inflationary component of debt service, with the noninterest budget in sufficient surplus to pay the real interest on the debt, then stabilization becomes more plausible. All that is needed is to find a way to jump from high inflation to no inflation. Failure to understand the role of the inflation adjustment could make it seem that an extraordinary deficit reduction through spending cuts or tax increases is required before stabilization can be considered. In this sense the famous IMF dictum, "a deficit is a deficit, is a deficit!" is a poor starting point for analyzing the fiscal fundamentals required for a successful stabilization.

IV. Monetary Reform and Monetization

The recent stabilization programs in Israel, Argentina and Brazil had as an important and highly visible component a monetary reform. We review here briefly the essential features of such a reform. They are mainly two. The first, which is crucial, is to shift contracts from those appropriate to an inflationary economy to those appropriate to a zero-inflation environment. The second is the introduction of a new monetary unit, the main purpose of which, other than cutting zeros, is to increase confidence and consolidate expectations.

Contracts: In an inflationary environment with large uncertainty contracts will have a very short maturity. Long-term capital markets will dry up. But even so contracts will be for a month or even six months. These contracts will specify nominal interest rates or implicit prices that are a reflection of the inflationary expectations prevailing at the time the contracts are concluded. For example with an inflation rate of 10 percent per month a one month loan contract will carry interest rates of at least 10 percent per month. Rent contracts entered into at any time will involve nominal payments over say six months that reflect the assumption of increasing prices. Wage contracts will be indexed in a formal or informal manner so that when they come up for renegotiation they are adjusted for past or for future inflation. A major problem for inflation stabilization is to recognize the presence of contracts which are in force at the time of stabilization. If the economy was to move from one day to the next from high inflation to zero inflation, outstanding contracts would give rise to major problems.

It is immediately obvious that debtors can service loan contracts involving very high nominal interest rates only if in fact the inflation expected at the time of contract actually materializes. A six month loan concluded with an inflation expectation of 10 percent per month would carry a 77 percent interest rate for six months. If inflation disappears the nominal interest rate of 77 percent becomes the real interest rate and hence the debt service burden would be extraordinarily large. An adjustment in all loan contracts is required to avoid a massive and unintended redistribution from debtors to creditors and the attendant risk of pervasive bankruptcy and financial instability.

For wage contracts the problem is perhaps even more complicated.

Suppose, as is realistically the case, that wages are readjusted every three or six months. Every time a contract comes up for renewal the money wage over the next three months is adjusted upward for the inflation which actually occurred over the past three months. With such a pattern of wage contracting an instant end to inflation is nearly impossible. Just as the government seeks to impose zero inflation some wage contract is coming up for renewal and workers will ask to be compensated for *past* inflation. The wage increase in turn creates cost increases and hence, inevitably, inflationary pressure. Accordingly, the transition to zero inflation needs to be accompanied by some restructuring of wage contracting to avoid this inertia effect. At the time of stabilization some wage earners will just have received their adjustment and hence will find themselves in the high real wage position of their three month cycle while others will be almost at the bottom. Freezing wages in this situation would be perceived as extraordinarily inequitable and hence would serve as an impediment to stabilization.

Monetary reform is the broad term that characterizes the rewriting of contracts and the reform of institutions to make them compatible with the zero inflation target. In the case of wages, monetary reform requires that those who had recent increases and hence have high real wages must see their wages rolled back, while those who are in the low real wage phase need upward adjustments. This reform could, in principle, be achieved by money wage adjustments in the old currency. The introduction of a new money may, though, help achieve the transition in a simplified manner. Note, too, that a new money provides an important instrument to avoid legal complications, uncertainty and challenges to the restructuring of contracts. Similarly for contracts involving future nominal payments a new money is a means of aligning the real value of payments with the expectations implicit at the time contracts were concluded. A tablita that converts the old money into the new according to a set timetable of depreciation is the practical means of achieving this end.

Often monetary reform also encompasses a capital levy on the public in the form of a write-down of monetary assets. Interestingly, in none of the recent stabilizations has this been attempted. This fact is all the more noteworthy in that, unlike in the 1920s, government debts remained very large and hence made the idea of budget balancing via a capital levy particularly interesting.

Monetization: Monetary reform also often includes a change in the monetary institutions. Along with the change in the monetary unit the change in the institutional arrangements is meant to dramatize the end of inflationary finance.

The traditional way to signal new rules of the game is to announce the independence of the central bank and an end of automatic financing of the budget by the printing press. But it is important here to read the fine print. In the 1920s the stabilizations did, indeed, involve institutional changes and limitations on the access of the government to the printing press, but that did not in fact imply an end to money creation for two reasons. One was that in some cases the transition was characterized by a large, once and for all issue of money. In Germany's case in 1923 the ceiling was set at 500% of the existing money stock.[10] But beyond this once and for all fiduciary issue there was also the possibility of the money stock increasing in the course of domestic private credit expansion or the monetization of reserve inflows. The experience from the classical stabilizations was one of extremely large increases in nominal money — several hundred percent — consistent with price stabilization.

The explanation for this large, non-inflationary money creation is quite obvious. During the high inflation period the cost of holding noninterest bearing money becomes extremely high. As a result, real balances decline, or the velocity of circulation increases. This is the famous "flight from money." The financial system accommodates the flight from money by creating highly liquid interest-bearing or indexed liabilities — the "overnights" which practically serve as money. Surely, one could not pay for a taxi ride with an indexed bond, but one can transfer funds any day from an indexed cash reserve account to a checking account by a simple telephone call to the bank before 10 a.m. In fact, living without M1 was a fashionable and profitable exercise. The fact that M1 did survive at all, though at an extremely reduced level, can only be explained by transactions costs and learning lags.

In the course of stabilization the reverse occurs. The disappearance of inflation raises the demand for M1 or transactions real balances. Unless deflation increases the real money supply, it is necessary to increase the nominal money supply through one means or another to avoid extravagantly high nominal and real interest rates. A non-inflationary expansion in the money stock is needed to meet the additional demand for money, the well-known reliquification or velocity problem. M1 should expand to replace other financial assets.

The problem is to fine-tune this expansion and to identify which aggregates must expand. Failure to expand M1, or too gradual an increase, means that the economy will slide into a recession because of a liquidity crunch. But too rapid or too large an expansion leads to a loss of credibility and reignition of inflation. The best solution might well be to set growth targets for total financial assets held by the public, allowing M1 to expand as long as other financial assets decline. Thus the government should accommodate the shift in the composition of the financial portfolio without, however, expanding the size of the total liquid asset portion. What are the implications of such a policy for broad monetary aggregates, for example M4? Here one would expect rough consistency (relative to GNP) unless there is a significant shift from dollar assets to domestic currency securities.

Financial Institutions: A major issue in the sudden end to a high inflation is the fate of financial institutions and specifically that of commercial banks and financial intermediaries. During inflation the public seeks to avoid holding money because of the depreciation of the purchasing power of money in terms of goods. The higher the rate of inflation the larger the implicit tax on money and hence the larger the resources people are willing to devote to avoiding this tax. The natural consequence is the emergence of an industry that makes it possible to live with a minimum of real balances or, equivalently, to speed up the circulation of money.

Commercial banks and other financial intermediaries are the natural agents in promoting the moneyless economy. They will surround potential customers with branches and attempt to attract deposits by paying some interest, thus helping their customers to avoid a complete loss of the purchasing power of their monetary assets. The proceeds of deposits in turn are re-lent at the high nominal interest rates commensurate with the prevailing rate of inflation. Differentials between deposit and lending rates leave ample room for the costs associated with an expansion of the banking system. The common observation, then, is that during inflation bank branches and bank employment mushroom.

When stabilization occurs inflation disappears and so does the absolute size of the deposit-loan rate spread. There is then an extraordinary profit squeeze which forces banks to close down branches and cut employment in a violent fashion. The effect is totally predictable and it is very serious not only from the point of view of labor relations but even more importantly from the perspective of financial stability. A successful monetary reform must take into account the fact that the financial industry is dramatically hurt by the end of inflation. Mergers, employment cuts and a shift to 'fee for service' banking need to be initiated in the immediate aftermath of the stabilization.[11]

We turn next to an analysis of the country experiences.

V. Argentina: The Austral Plan

Argentina's extraordinary macroeconomic history reflects an interplay of adverse shocks, domestic and external, economic and political. But the basic difficulties are two: the unions are inside the country and the money is outside; the unions are British and public finance is Italian.

In June 1985 Argentina implemented the Austral Plan, the first of the new stabilization programs to combine incomes policy with fiscal austerity. In Figure 1 the recent inflation history of Argentina is shown as the quarterly average of the monthly rate of inflation of consumer prices. Prior to stabilization inflation had increased over the past five years from less than 100 percent toward the end of the destructive stabilization attempt under Martinez de Hoz to nearly 1000 percent and sharply rising in the spring of 1985. In May 1985 the inflation rate, at an annual rate, exceeded 2500 percent!

History: Table 2 gives details on the inflation rate, real wages and the real exchange rate, industrial production and the budget deficit.

Figure 1
Inflation in Argentina
(Percent per Month)

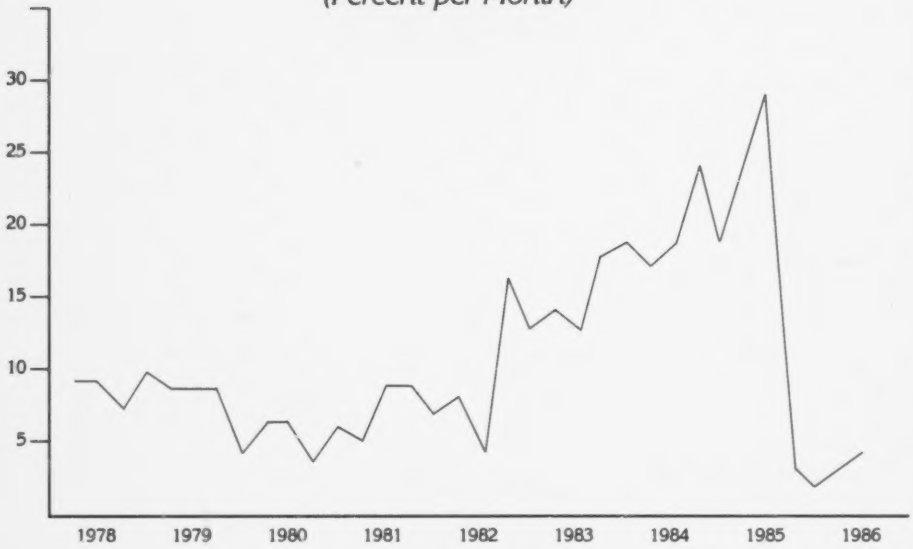


Table 2
Argentina: Key Macroeconomic Indicators

	1981	1982	1983	1984	1985:I
Inflation (% per year)	105	165	343	627	918
Budget Deficit (% of GNP)**			12	11	12.5
Real Wage*	87	80	100	120	134
Real Exchange Rate*	151	108	100	112	107
Industrial Production*	94	91	100	103	97

Note: * All indices 1983 = 100. ** Consolidated cash deficit of the public sector, including operations of the Central Bank.
Source: Carta Economica, Coyuntura Economica and Morgan Guaranty

There is no natural beginning to the recent inflation bout. The last large inflation had occurred toward the end of the Peronist administration in mid-1975. At its peak that inflation reached 35 to 40 percent per month.[12] In the period 1976 to 1981 the military government achieved a reduction of inflation to an annual rate of less than 100 percent, but that reduction was bought at the price of a huge overvaluation of the exchange rate which ultimately precipitated massive capital flight and accumulation of external debt.[13] Successors to finance minister Martinez de Hoz failed to contain inflation at around 100 percent, being handicapped by the preceding debt accumulation, the Malvinas war and the accompanying credit rationing in world markets as well as a terms of trade deterioration.

A notable event in the inflation history was the deliberate attempt to eliminate the real value of internal debts, public and private, in June-July 1982 by the Dagnino Pastore-Cavallo team. For the remainder of the military government, until fall 1983, a holding action contained inflation below 400 percent while achieving some recovery of economic activity. Budget performance throughout was very poor, a large part of the deficit representing losses on exchange rate guarantees granted by the Central Bank in the aftermath of the Martinez de Hoz overvaluation.

Stabilization: The Alfonsin government came into power in January 1984. Initially the government attempted to cope with the problem of inflation by gradualist policies under repeated IMF programs. But not much was achieved, in great part because large real wage increases caused cost and budget performance to deteriorate, forcing repeated major devaluations. The steady worsening of inflation, even in the face of half-hearted attempts at gradualist stabilization, ultimately forced the government to explore a different direction.

The shift in policies, in spring 1985, was triggered by two facts. The first was that the economy was well on the way to hyperinflation. At monthly rates the inflation had risen from only 18 percent at the time of election to the 25-30 percent range. The second was that the government faced elections in fall 1985 and hence could afford neither a German-style hyperinflation nor an IMF-style depression at that time.

Perhaps because the German hyperinflation possibility was so actively on the minds of the economic team, the idea of monetary reform as a comprehensive framework for stabilization moved to the center. Because the team had a basically structuralist persuasion, an incomes policy was thought an indispensable part of the stabilization.[14] At the same time the economic team had become distinctly more orthodox since the replacement of economics minister Grinspun by Juan Sourouille, recognizing that any attempt at stabilization without budget consolidation and correction of relative prices would inevitably fail.

The loss of confidence in gradualist policy, and an unwillingness to accept IMF austerity *per se*, led to the conception of the Austral Plan of June 1985. The plan struck a balance between the fundamentals — monetary and fiscal austerity — and pragmatism (or good theory) residing in the adoption of wage-price-exchange rate controls as the central feature of the disinflation program. The key features of the plan were the following:[15]

(a) Upon adopting the program, the government increased public sector prices, depreciated the exchange rate, imposed import duties and export tariffs. These measures were designed to improve the budget and to align key relative prices prior to the freeze.

(b) A wage-price freeze and a fixed exchange rate on the U.S. dollar until further notice. The wage freeze involved a sharp cut in the real wage since there was to be no catch-up provision for the increases in public sector prices and in the exchange rate.

(c) A timetable (tablita) was announced to adjust outstanding contracts for the immediate and unanticipated end of inflation.

(d) A new monetary unit was introduced — the Austral. The old money was allowed to continue in use and circulate at par.

(e) The program was accepted by the IMF and served as a basis of debt rescheduling with new money financing a significant part of arrears and current debt service.[16]

One Year Later: Where has the Austral Plan taken the Argentine economy over the past year? Table 3 shows the quarterly and most recent data.

Table 3

Argentina: One Year of the Austral Plan

	1985:I	**1985:II**	**1986:I**	**1986:June**
Inflation (% per month)				
CPI	26.2	2.5*	3.8	4.5
WPI	28.5	0.8*	2.1	4.6
Nominal Interest Rate (% per month)	27.7	6.9	6.0	5.7
Money Growth (% per month)				
M1	23.4	8.5*	4.5	5.4
M4	24.3	7.9*	6.4	6.4
Budget Deficit (% of GDP)**	12.5	4.1	4.1	
Real Wage	134	95	97	98
Real Exchange Rate	107	93	88	88
Industrial Production	97	99	111	121

Note: All indices 1983 = 100, * August-December, ** including losses of the central bank. The interest rate is the active money market rate.

Sources: Carta Economica and Morgan Guaranty

The first point to note is that inflation has been cut dramatically, but it has not disappeared. On the contrary, by July/August it was already at the rate of more than 100 percent per year and rising.[17] The second point is that economic activity, as measured by industrial production, has picked up sharply and is back to the previous peak levels of 1979–80, before the Martinez de Hoz experiment crashed. The Austral plan thus has two faces. While it has been less than a total success at inflation eradication, it has achieved its results under conditions of sharp recovery. There is no comparable experience under an IMF program. In our judgment, the Argentina experience makes quite forcefully the case for programs that combine fiscal consolidation with an incomes policy. We return to the insufficient use of fiscal restraint below.

A year certainly is not enough to judge the full course of the program, but it is far beyond an initial phase. Even if the program at present has all the appearances of melting, it is not generally expected that it will collapse outright or that anything like the previous inflation experience is likely. On the contrary, the black market premium continues to be moderate. For the pessimist, the Austral Plan thus has at least given Argentina a temporary respite from a 2000 plus percent inflation. For the optimist, it has given a breathing spell to consolidate public finances and restore conditions of growth under moderate (if high by the standards of industrial countries) inflation. Whether moderate inflation is sustainable is, of course, an open question.

It is obvious what went right. There was a significant correction in the budget. Part of this correction took the form of a reduced domestic currency cost of debt service, while much of the correction came from a sharp increase in the real value of tax collection. This increase reflects the end to the inflationary erosion of revenues and the introduction of new taxes and a scheme of forced saving.

Even with these corrections the deficit remains, however, very large. In fact, there is some question about various government contingent liabilities which do not find a place in the flow measure of the deficit, but which do represent a potentially very serious threat to fiscal stability. At the same time there remain several points of concern with respect to taxation. For those few sectors or households that actually pay taxes, rates are probably too high. At the same time some taxes, for example export retentions on agricultural products, are directly distortionary and have as their only rationale the ease of collection. Thus although some fiscal consolidation is taking place, public finance remains a disaster area.

Until April 1986 the government maintained a fixed exchange rate on the U.S. dollar. Since then a policy of mini-devaluations has been followed to avoid a deterioration of external competitiveness. The ability to hold the *real* exchange rate relatively constant despite domestic inflation is explained by the large depreciation of the U.S. dollar in the world currency markets. A fixed peg of the Austral to the depreciating dollar meant that there was an automatic partial offset against the real appreciation caused by domestic wage and price inflation. The dollar depreciation thus helped carry the fixed exchange rate policy for a few months.

The government at no time committed itself to a zero inflation target. Here is an important difference with Brazil. In Argentina the government promised fiscal stabilization and no budget-based money creation, while in Brazil the promise was for "inflacao zero." The Argentine government was wise not to make a zero inflation commitment. The economy is basically closed and there is little competition so that oligopolistic firms and extraordinarily aggressive unions interact in sectoral games of raising their relative income shares. Because of the political force of the unions the government cannot avoid sanctioning most of the wage increases and, for employment reasons, most of the price increases as well. The Argentine program, after instantly shifting to zero inflation for a brief moment, moved immediately into a second phase of administered inflation. An economy run with significantly more slack would perhaps have avoided the inflationary pressure but that might have made for much worse politics.

There is an interesting question as to where the expansion came from. One might perhaps most obviously point to the large and sustained rates of money growth, but several factors point in the opposite direction. A contraction rather than expansion should have occurred when one looks at the deficit which declined, real wages which fell and real interest rates which were extraordinarily high — 70 or 80 percent per year on an inflation-adjusted basis in the second half of 1985. Among the plausible explanations for the expansion, the first is the restoration of credit. In the period of intense inflation credit was unavailable for consumers and hence consumer durable sales slumped. With the end of extreme inflation consumer credit reappeared, though at extraordinarily high real rates, and that helped promote demand and production.

The second explanation relates to real wages. The depreciation and public sector price increases on the eve of the reform reduced real wages. At the same time, however, the purchasing power of incomes may have been to some extent increased by the fact that inflation came to a halt. When inflation slows, the part of income not spent toward the beginning of the month more nearly preserves its purchasing power. Thus, the halt in inflation is equivalent to a shift in real income toward labor which in turn has a high spending propensity.[18]

The third explanation concerns the budget. During the high inflation the deficit was financed by an inflation tax. The fiscal correction has shifted the correction from money holders to those who pay outright taxes (agriculture and large firms, for example). This redistribution, once again, may have been a source of increased purchasing power for groups that have high spending propensities. But even with these factors in mind the expansion in demand and output may not be fully explained.

What Next? At the present stage of the stabilization program two major issues emerge quite clearly. The first is whether the government can achieve further budget correction and thus provide assurance that inflation can remain moderate. Nobody expects zero inflation, but the active issue is whether inflation can be kept near 100 percent. Of course, there is the question of whether triple digit inflation can be stable. But that is more a question of the shocks than of the current problems of fiscal consolidation.

The second problem is the poor growth performance viewed in a trend perspective. Per capita output today is more than 10 percent lower than it was fifteen years ago, and what is worse, the decline in per capita output is bound to accelerate. Net investment has been zero or negative for several years in a row and there is no prospect of a change. These facts bring out the link between stabilization and growth. Stabilization and recovery involve primarily the demand side. But at some stage in the recovery considerations of growth and the supply side must enter.

The budget correction is not only essential to contain excess demand and inflationary pressure, but also to promote investment. The link between the budget and investment occurs through two channels. The first is through credibility effects. If the private sector anticipates deficits and hence worsening of inflation, they will expect that the government will use tight money to make up for the lack of fiscal consolidation. Tight money presents the firm with the risk of being caught in an investment with a high cost of debt service and with no customers. Hence firms are reluctant to invest, using price increases and overtime to respond to demand rather than durable expansion in capacity and employment.

The other link between the budget and investment comes from the side of resource constraints. In a fully employed economy, as Argentina is today, resources for investment can only come from reduced consumption, from reduced government spending or from increased net imports. To cut government spending is the poujadist-popular option, but it has proved politically impossible at least in the short term. Reduced consumption can, indeed, be achieved by a fiscal tightening. This is the correct option in a country where only 4 percent of total tax collection comes from income taxes. Finally resources can come from abroad. That would pose the problem of increased external borrowing, perhaps in the form of forced lending by the creditor banks or reduced spreads. It also brings the need for liberalizing restrictions on imports so that potential investors actually have access to foreign goods. Increased foreign borrowing should certainly be part of an investment campaign in that it bridges the short-run political problems and provides a disinflationary impact.

It is doubtful that the investment and growth problem can be solved by the budget alone. The budget at best can help provide a favorable background for other forces to promote investment. The most favorable sign at this time is the prospect of an Argentina-Brazil common market. Such a development would add weight to the productive forces of the economy and might well be the decisive event to bring back growth. With a return of growth public finance problems and distributive quarrels might well retreat to the background.

VI Brazil: The Cruzado Plan

On February 28, 1986, President Sarney announced a major monetary reform, the Cruzado Plan. Twenty-two years after the Bulhões-Campos stabilization of 1964–67 Brazil had once again come to face the political and economic difficulties of inflation largely running out of control. A highly interventionist and technically sophisticated program of stabilization was once again used to stop inflation without tears. We first review the background to the inflation acceleration and then proceed to an analysis of the plan and its current performance.

The Bulhões-Campos Reforms: In the late fifties and early sixties annual inflation rates escalated from 17 percent per year in 1958 to 92 percent in 1964, first as a consequence of the Kubitschek expansionary policies, then as a result of the populist engagements of the Goulart administration. Between 1964 and 1967, the Bulhões-Campos reforms, backed by military President Castello Branco, successfully brought down the inflation rate to 24 percent a year and restored both external equilibrium and Brazil's access to foreign credit markets. The side-effects on output were not only tolerable but short-lived, since the 5 percent industrial recession of 1965 was followed by a 9 percent industrial recovery already in 1966. Moreover, the road was paved for a seven-year period of high growth and declining inflation.

The reforms were a skilful mix of a budget deficit cut, incomes policies, exchange rate devaluation and capital markets indexation. By cutting government consumption and subsidies and by raising taxes, the public sector deficit was reduced from 4% to 1% of GDP. Exchange rate devaluations replaced the commercial arrears of early 1964 with a comfortable reserve position in 1965 and 1966. Indexed capital market instruments encouraged private savings and restored the mortgage market, virtually killed in the early sixties by the 12% a year usury ceiling on nominal interest rates. Tax indexation, besides stimulating private savings by no longer taxing inflation adjustments, was also helpful in reducing tax evasion (in 1963, when the inflation rate was running at 80% a year, the penalty on tax arrears was no more than 32% a year).

The incomes policy part of the plan, which played a major role in fighting inflation, and which became one of the sources of inspiration of the Cruzado plan, actually meant wage deindexation. The central idea, described in Figure 2, was that in a staggered wage setting two concepts must be distinguished, the real wage peak W_o and the real wage average W_m. The peak corresponds to the worker's purchasing power immediately after each nominal salary increase, but should not serve as a reference value, since it is quickly eroded by inflation. The average real wage is actually what the economy can afford to pay the labor force and what should be maintained by income policies, except for productivity adjustments. Since the average/peak ratio is a decreasing function of the inflation rate, peaks should be properly lowered whenever the inflation rate is expected to decline. This means that, with decreasing inflation rates, nominal wages should be adjusted less than proportionally to past cost of living increases.

From a technical standpoint the Bulhões-Campos wage formula provided a setting for economy-wide expectations formation. It became an income policy tool because the wage adjustment interval was fixed at twelve months and because both the productivity adjustment and the expected rate of inflation were decreed by the government, leaving no room for collective bargaining.

Except for market adjustments in individual wage negotiations (which were never prohibited by the government), the Bulhões-Campos wage rule would actually squeeze the real wages whenever future inflation rates were underestimated by the government. The problem was felt in 1965, 1966, and 1967, when the cost of living increased 45, 41 and 24 percent, respectively, compared to prospective inflation rates of 25, 10, and 15%. The outcome, a 25% real wage decline in manufacturing industry between 1964 and 1968, may be partly explained by the weakened position of the labor unions under the military regime.

A more consistent view, however, is that a substantial decline in real wages was inevitable, given the policy objectives of increasing indirect taxes, real rents and real public utility rates, cutting subsidies, and promoting a strong exchange rate devaluation. It could be the result of prolonged stagflation, it could be achieved by higher inflation rates, but still it was inevitable. The Bulhões-Campos wage formula helped to reconcile this inevitable real wage cut with declining inflation rates and low output losses.

Figure 2
Real Wages and Inflation

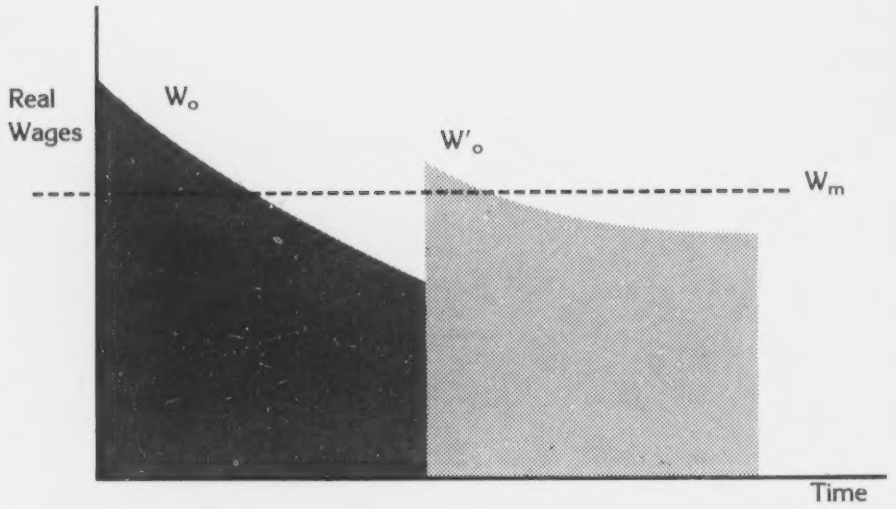
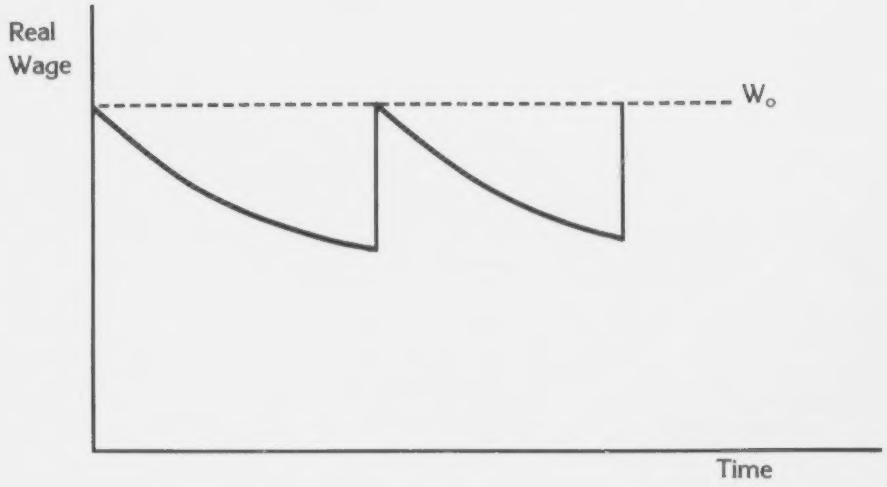

Real Wages
W_o
W'_o
W_m
Time

Figure 3
Real Wage Adjustments


Real Wage
W_o
Time

Widespread Indexation: Imaginative as they might have been, the Bulhões-Campos reforms involved a major asymmetry that could not last for long. Most incomes and financial assets were indexed, but not wages and the exchange rate. The almost inevitable extension came on stage in 1968. In the case of the exchange rate, a crawling-peg adjusted the dollar/cruzeiro rate at small and irregular time intervals according to a basic guideline consisting of the inflation rate differential between Brazil and the United States. In the case of wages a complicated formula was enacted to offset the effects of unanticipated inflation in the Bulhões-Campos wage rule. In practice it meant that nominal wages were to be adjusted every twelve months in proportion to the cumulative increase in the cost of living plus a productivity gain. This indexation rule was a backward-looking one which instead of stabilizing the average purchasing power W_m, simply restored every twelve months the real wage peak W_o adjusted for productivity increases, as in Figure 3.

Since the average/peak ratio is a decreasing function of the inflation rate, the new wage rule implied that inflation could only decline so long as average real wages grew faster than the officially determined productivity gain. Moreover, since the law determined a floor rather than a ceiling to changes in labor compensation, it introduced an asymmetry between inflation acceleration and inflation deceleration. In fact, markets were free to increase the real wage peak W_o, but not to reduce it, except through labor turnover, the only way to escape the law. Yet this was a costly device in the case of skilled labor and largely ineffective in the case of non-skilled workers, since the latter were protected by minimum wage levels adjusted by the same indexation rule.

In short, backward looking wage indexation introduced highly adverse short-run inflation-output trade-offs, discouraging quick anti-inflationary policies and favoring monetary accommodation. The problem was not perceived until 1973, since during the golden years of the Brazilian miracle real wages could rise much faster than the officially determined productivity increases with annual inflation rates gradually falling from 25% in 1967 to 16% in 1973. Yet the expansionary monetary policies of 1972 and 1973 combined with the first oil shock to lift the annual inflation rate to 35% in 1974. Tight monetary policies were then tried, but it was soon perceived that indexation had anchored the wage-price spiral. Eventually monetary accommodation was accepted, annual inflation rates being kept in the 35-40% a year range until 1978.

Escalation: Two imprudent policy steps in late 1979 were to lead to further escalation of inflation rates. First, the government decided to control interest rates, accepting high increases in the money supply. Then a new wage law, besides introducing a number of complications, reduced the nominal wage adjustment interval from twelve to six months. As theory could predict, what was previously the annual rate of inflation became the six month inflation rate. Tight monetary policies implemented in 1981 and 1982 had to face the adverse trade-offs created by backward-looking indexation. The country experienced its first major industrial recession since 1965, but inflation rates only declined from 110% in 1980 to 95% in 1981 and 100% in 1982.

A dramatic balance of payments adjustment in response to the debt shock was imposed in 1983. Key policy changes were a 30% real exchange rate devaluation and, following IMF advice, substantial indirect tax increases and subsidy cuts. This, of course, implied a significant real wage cut that, under the prevailing indexation rules, could only be achieved by an acceleration of the inflation rate so as to squeeze the average/peak ratio to the proper level. In fact, inflation leaped to 210% a year, tight monetary policies producing only an unprecedented recession. Figure 4 shows the course of inflation acceleration. Eventually, in mid 1984, the government decided to turn once again to monetary accommodation.

Table 4

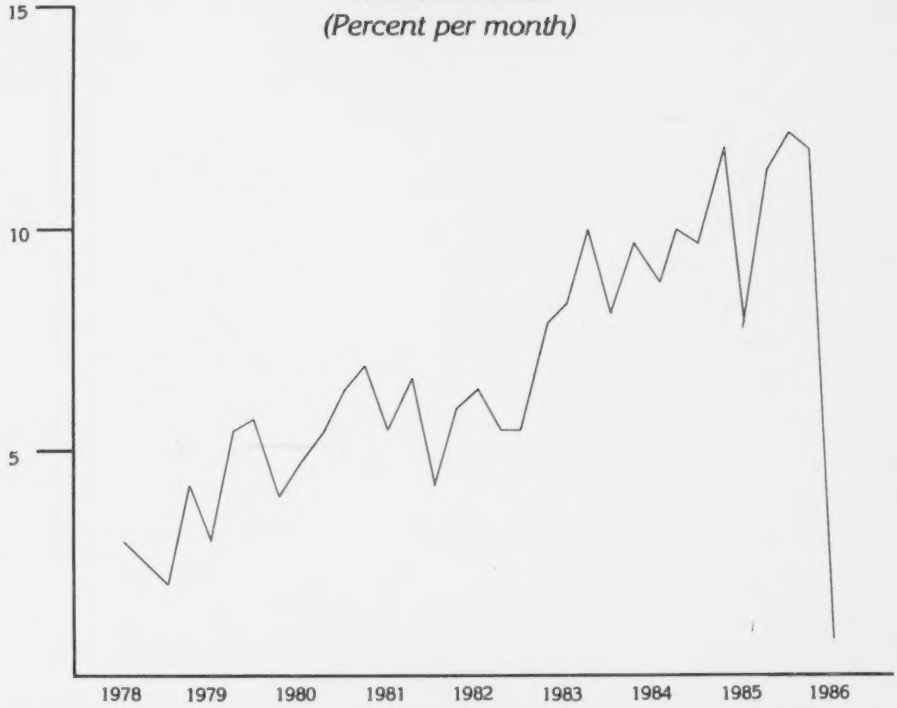
Brazil: Key Macroeconomic Indicators

	1982	1983	1984	1985
Inflation	95	155	221	226
Budget Deficit (% of GDP)				
Actual		19.9	21.8	26.2
Operational		3.0	1.6	3.2
GDP Growth	0.9	−3.2	4.5	8.3

Source: Banco Central do Brasil Brazil *External Program*, May 1986

In March 1985, the passing of power to a civilian president opened the way to increased wage demands by labor unions. The government first tried to reconcile substantial increases in real wages with reduced inflation rates by tightening price controls and by increasing the real interest rate on Treasury bills to 21% a year. In August, Dilson Funaro replaced Francisco Dornelles as Minister of Finance. Some price controls were lifted, interest rates were substantially lowered and real wages continued to increase at unprecedented rates. As a result, by the end of 1985 and in January and February 1986, the inflation rate escalated to almost 15% a month. President Sarney, under the risk of losing all political support, decided to react with a bold announcement, the "heterodox shock."[19]

Figure 4
Inflation in Brazil
(Percent per month)



The Cruzado Plan: The Cruzado Plan was intended to stop inflation by a standstill on all indexation. The key measures were the following:

a) Prices were frozen and the exchange rate was fixed at 13.80 Cz/$US. The public was enlisted to defend vigorously the controls and the government committed to a zero inflation target.

b) Wages were converted into cruzados by computing their average purchasing power in the last six months with an increase of 8% in general, and with a 15% bonus in the case of the minimum wage; a trigger point indexation clause was introduced with a threshold of 20%;

c) The same rule, except for the 8 percent increase, was extended to rents and mortgage payments;

d) Cruzeiro bills and demand deposits were immediately converted into cruzados, without write-offs, by a cut of three zeros. Conversion rates for cruzeiro denominated liabilities with future maturities were set to decline by a daily factor, starting February 28th, of 1.0045 until maturity.[20] This conversion rule did not apply to indexed liabilities.

The immediate success of the program was overwhelming. Consumers could compare supermarket prices with the listed official maximum prices and denounce violators to the police, according them the feeling that their voices could be heard. The fact that nominal wages were cut in some cases and adjusted substantially below past inflation in all cases did not cool off the popular support for the program. A demonstration prepared by leftist groups against the new wage policy was not able to draw more than two hundred people.

Table 5

Brazil: Macroeconomics Under the Cruzado Plan

	1985:I	1985:II	1986:I	1986:June
Inflation (% per month)*	10.1	11.9	0.5	0.6
Industrial Production**	110	128	125	135 ***

* Cost of Living in Rio de Janeiro ** Fiesp Index 1982 = 100, 1986 data refer to Jan.-May only. *** May

Source: Conjuntura

Similarities between the Austral and the Cruzado Plan are evident. Some important differences, however, result from the fact that Brazil decided to stop inflation long before it reached the Argentine rates of early 1985. In Argentina there was no synchronization problem as far as wages were concerned, since inflation had come to the point of leading to monthly wage adjustments. In Brazil the synchronization problem did exist, since nominal wages were kept unchanged from three to six months. The solution, largely inspired on the Bulhões-Campos reforms, was to convert wages into cruzados at their average purchasing power in the last six months. Yet, since the Cruzado Plan had to be dressed in a fashion that would never recall a military uniform, three softeners were introduced: the 8% real wage bonus, the 15% real minimum wage increase and the "scala mobile" with a 20% threshold. Whether there was room for such real wage gains is a questionable issue.

Second, although the Plan tried to solve the problem of wage synchronization, it did nothing to meet the staggered price-setting issue. Prices were frozen at their level of February 27th, when the relative price structure had no reason to be close to equilibrium. Some sectoral prices, including milk, automobiles, pharmaceutical products and electric power were clearly frozen below their equilibrium point. Hence, the success of the Cruzado Plan was contingent on a short-term replacement of price freezes by price administration.

A trump card for the Brazilian authorities was that the Cruzado Plan was implemented under highly favorable external conditions. In 1984 and 1985 Brazil had already scored trade surpluses in the range of 12.5 to 13.0 billion dollars a year, bringing its external current account to equilibrium in spite of the huge interest payments on the foreign debt. The Cruzado Plan was implemented when the decline in oil prices, the decline in international interest rates and the depreciation of the dollar implied a five billion dollar annual improvement in the Brazilian external accounts. From this point of view, the Cruzado was far more strongly backed than the Austral.

As opposed to the Austral Plan, the Cruzado was announced as a pure incomes policy, since it was believed that fiscal adjustment had already been promoted in late 1985 and that the Brazilian inflation of January and February 1986 was purely inertial. The budget, the Brazilian authorities might have claimed in early March, was already in equilibrium, or showing at most a very small deficit, not exceeding 0.5% of GDP.

Until late May the Cruzado honeymoon was incredibly happy — too happy to be sustainable, as the authorities should have suspected. Inflation not only immediately stopped with no recession, but retail sales expanded by 25% in real terms, real estate prices doubled and stock prices experienced an unprecedented boom. In the wave of optimism Brazil was described by the Minister of Finance as a country with Swiss inflation and twice Japanese growth, and the President decided that the price freeze that brought him so much popularity should be kept until the memory of inflation was definitely erased. As for the business community, its few concerns with low profit margins and with the political management of the price system were largely superseded by the euphoria arising from higher sales.

That this was a situation ripe for demand inflation to take off was the lesson ignored by Brazilian policy makers. They did not even react to some disquieting signals, such as the steep price increases of commodity futures and the rapid growth of the black market exchange rate premium. Plainly, demand was overheated, both because of the real wage increases and because the public sector deficit actually remained at 4.7% of GDP. Shortages, black markets and lessened quality were visible as of early June. In late July and early August the government announced a small scale fiscal package, and decided to liberalize a few imports and to increase interest rates. Whether this will be enough to bring supply and demand to equilibrium is questionable. A more complicated problem is that, in order to sustain the historical growth trend, Brazil must raise its domestic savings rate from 15% to 20% of GDP, and up to now little has been done to encourage savings.

The Outlook: Whether the cruzado will become a success story or one more frustrated attempt to fight inflation by its symptoms is still an open question. A lasting success is contingent on three major steps.

First, a true fiscal reform is needed. The present budget deficit of 4.7% of GDP is obviously too high compared to private savings and to the country's capacity to attract foreign capital. Moreover, the expenditure side contains too little investment and too much consumption, subsidies and transfers. Government savings, namely revenues minus current expenditures, varied from 2% to 4% of GDP in the seventies. Recent estimates indicate that the government is now dissaving 0.6% of GDP.

Second, price administration should quickly replace the price freeze. The official idea that the freeze should be maintained until inflationary expectations are definitely abated is self-defeating, since shortages and black markets can only reignite expectations of price increases.

Third, if the plan is to keep some credibility, a low inflation target should replace the zero inflation promise. Accordingly, some indexation mechanisms should be reintroduced to encourage savings and to develop long term credit markets. Indexation intervals should be large enough (say, one year) to prevent the emergence of indexed quasi-money, as occurred in the early eighties. Yet they should realistically recognize that no magic can erase the memory of inflation in a country that since the early thirties has never experienced a prolonged period of price stability.

VII The Israeli Experience

On July 1, 1985 the Israeli government adopted an emergency program of stabilization. Already in force for more than a year, the program continues to show a good inflation performance.[21] We start with a review of the background to the stabilization, then consider the stabilization, the experience since, and the current policy issues in Israel.

Background: The background to the Israeli stabilization of 1985 is given in Table 6. The 1960s had been a period of extraordinary growth and very low inflation. Population growth had been high, in part as a result of substantial immigration. Against this success the decade of the 1970s represents a sharp drop-off and the 1980s a dramatic deterioration. The increase in inflation, of course, was an issue but the more serious point was the slowdown in growth and the sharp change in the growth rate of population.

Table 6
Israel: Basic Indicators
(Average Annual Percentage Rates)

	1960–70	1970–80	1980–84
Inflation	6.4	41	178
Real Growth	9.7	5.2	2.0
Population Growth	3.4	2.7	1.4

Source: IMF International Financial Statistics

Where before the economy provided opportunities through sustained growth, it now had become bogged down and offered little prospect of a return to the performance of the 1960s. Where immigration had once been substantial, now emigration was becoming an issue. Of course, facing the prospect of a high birthrate among the Arab population along with a reduced birthrate and a pattern of net emigration among the Jewish population held out extremely difficult prospects for political life in Israel. The focus on a resumption of high and sustained growth therefore became the number one priority. But inflation and a lack of consensus on priorities kept the economy away from a reasonable performance. Above all there was an unwillingness to risk a stabilization that might lead to high unemployment and, of course, no disposition to consider drastic budget cuts.

At one level there is certainly neither a puzzle nor a lack of understanding regarding the basic reason for the Israeli inflation. The central place of the budget deficit and of indexation of financial assets and of wages was well-recognized. Table 7 shows the data for the budget.

Table 7

Israel: Budget Deficit and Financing

(Period Averages, Percent of GNP)

	1960–67	1968–80	1981–84	1984
Expenditure:				
Domestic	29.1	50.3	61.5	62.9
Foreign[a]	1.9	4.5	−1.5	−2.9
Taxes:	29.1	39.3	46.4	46.0
Deficit Financing[b]	1.9	15.5	13.8	12.9
Base Money	2.4	2.7	2.4	3.2
Domestic Debt	−2.4	5.6	6.4	3.9
Foreign Debt	1.5	6.9	5.1	5.8
Memo:				
Defense Spending	10.6	25.4	23.9	24.0

[a] **Net foreign expenditure taking into account unilateral transfers.**

[b] **Deficit financing as measured here corresponds roughly to the inflation-adjusted or operational deficit.**

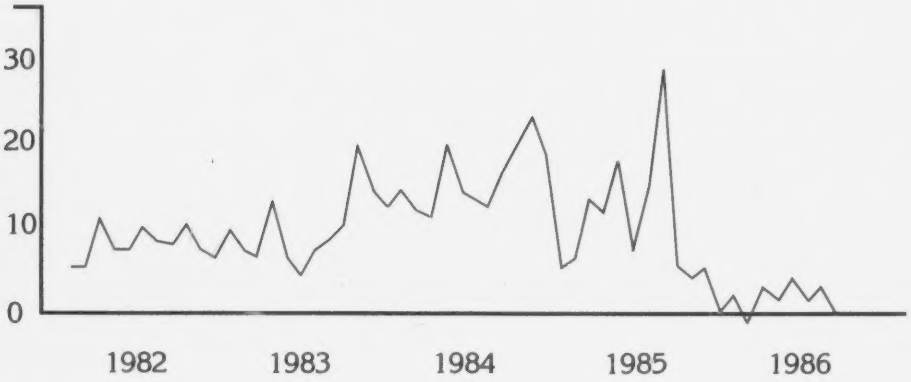
Source: Fischer (1985a)

There is an extraordinary shift in the deficit between the 60s and the 70s. Sharply increased defense spending accounts for much of the increase in spending and in the deficit, but there are other factors, too. The most striking fact, of course, is the huge size of the inflation-adjusted deficit which averaged nearly 15 percent of GNP throughout the 1970s. Particularly noteworthy is the very large share of taxes in GNP. The ratio in Israel of 46 percent compares with the average of only 35 percent in the major industrialized countries.

Perhaps the most striking fact is that the total budget deficit in the last few years, and specifically in 1984 was not higher than in the last fifteen years. Monetary policy was outright passive: money creation was geared to financing the deficit. The deficit to be financed by base creation, however, did increase by 0.8 percentage points to 3.2 percent of GNP. But this in itself might not appear to be a large change nor would it seem to be an absolutely large rate of money creation. The Israeli experience therefore calls for an explanation of why inflation should respond so sharply to seemingly small changes in the pattern of deficit finance. The transition toward really high inflation might not have been solely or primarily due to the shift in financing toward money. Other factors, including the reduced growth in demand for the monetary base and exchange rate policy also played a role.

Figure 5 shows the rate of inflation (quarterly averages of the monthly rate) for the period 1973–85, up to the time of the monetary reform. In these data it is apparent that inflation gradually increased from the level of about 50 percent to somewhat above 100 percent in the early 1980s. The dramatic escalation only occurs in 1984–85 and thus cannot be explained by a sudden budget shift. To explain the actual path of inflation, and specifically the explosion in 1984–85, exchange rate policy, the interaction between growth and inflation and adjustments in the financial sector must be taken into account.

Figure 5
Inflation in Israel
(Percent per Month)



Macroeconomic experiments of different kinds were attempted in the early 1980s, ranging from Chilean style overvaluation to a last-minute plan of adopting the US dollar as the national currency.[22] In 1981–83, under finance minister Aridor, the exchange rate was allowed to become substantially overvalued. The real appreciation in 1981–83 reached more than 25 percent. The overvaluation policy contained the inflation rate in a 100–130 percent range because it provided gains in real wages at reduced rates of wage and hence price inflation. But, of course, the overvaluation meant that growth slowed down and that a balance of payments crisis was inevitably building.

The overvaluation and expectation of an ultimate depreciation accelerated the substitution toward interest bearing assets, thus reducing the base for the government's inflation tax. At the same time the reduced growth rate of real income cut back the growth rate of the demand for the real monetary base. With unchanged rates of expansion of the base (measured as a fraction of GNP) as in Table 7 the imbalance translated into sharply increased inflation. The shift toward an increased participation of money finance in the total deficit strongly reinforced this point.[23]

The combination of reduced growth of the real demand for the monetary base because of lower income growth, institutional change in the form of a shift toward non-monetary assets, an increased share of money finance and the corrective depreciation at the end of 1983 together created a major inflation shock. Because of wage indexation in three month and later even single month intervals there were few lags in the system so that wages and prices rapidly adjusted to these disturbances. Essentially the system was without any anchor or friction other than what the government could negotiate with labor or pay for via overvaluation and subsidies. Moreover, this lack of an anchor was recognized by the public and helped speed up everybody's adjustment of wages, prices and portfolios.

The Eve of the Stabilization: The last stages of the pre-stabilization period can be seen in Figure 5 which shows monthly rates of inflation. The overvaluation period came to an end in October 1983 with a large exchange rate depreciation. Discussion of stabilization had started in 1983 under Aridor and by 1984 had become widespread. The July elections failed to give either party a majority and as a result led to a National Unity Government which took until September to form.

Over the next six months two wage packages were in effect. Their success is clearly shown by the very low rate of inflation in December 1984 and January 1985. But equally recognizable are the adjustments in between packages that led to sharp increases in the inflation rate. There had also already been a significant budget cut, but even so by mid-1985, it had become clear that a much more comprehensive and far-reaching program was required to stop inflation. The program was made more urgent by persistent losses of foreign exchange reserves.[24]

The Stabilization Program of July 1985: In June 1985 a commission was appointed to develop a stabilization plan and in July the program was announced and implemented by emergency decree. The main features of the program were the following:[25]

(a) A proposed cut in the budget equal to 7.5 percent of GNP ($US 1.5 billion).

(b) A 20 percent devaluation of the shekel and establishment of a fixed exchange rate relative to the dollar. The measure was accompanied by reductions in import duties and export subsidies.

(c) Freezing of all wages and prices.[26]

(d) Exchange rate linked deposits were maintained (without capital levy), but their liquidity was reduced by requiring a one year minimum maturity for new deposits.

(e) A time horizon of one year, with a gradual phase-out of controls over the period.

(f) A U.S. supplementary aid allocation of $US 1.5 billion.

Two important issues in this program were the ability to secure labor's agreement on the wage freeze and to achieve the proposed budget cuts. Agreements with the labor union (the Histadrut) are a common feature of Israeli macroeconomics. The labor unions, which own 25 percent of industry, have on various occasions collaborated by foregoing cost of living increases. In this instance, too, they helped out. Although ostensibly protesting the use of emergency decrees they accepted after a month a wage package that introduced an initial increase in compensation in return for giving up the cost of living adjustment and prefixed increases at several points over the subsequent six months. The net effect of the wage agreement was to lock in for some time a cut in real wages. The reintroduction of cost of living adjustments would be subject to a 4 percent threshold.

The most difficult part of the stabilization was clearly the commitment to cut the budget. It always seemed impossible to cut the budget. Every single item seemed beyond the government's ability to cut and, clearly, the idea of even higher taxes was quite impossible. In this atmosphere there was wide-spread doubt that a 7.5 percent of GNP cut in the deficit could be possible. The only places that seemed to offer themselves for cuts were the vast subsidies on exports and on virtually everything else. But, of course, further subsidy cuts would mean cuts in real wages or cuts in export profitability. Further real wage cuts over and above those implied by the devaluation were difficult to conceive. The alternative, reductions in export subsidies at constant exchange rates, seemed unwise since they would involve a loss in competitiveness and a weakening of the external balance which supported the exchange rate policy. Cuts in subsidies on basic food and on transport made most sense in terms of the supply side, but they might also be the most difficult to bring about politically.

The government's ability to cut the budget therefore was clearly the central issue. Because of the doubt about effective budget cuts there was skepticism regarding the sustainability of the entire program. This was particularly the case among some of the economists of Tel Aviv University, who were outside the program committee and therefore could afford to indulge their skepticism in a most vocal fashion.

The State of the Program in 1986: In August 1986, 13 months after the inception of the program, all seems well, at least within limits! To the surprise of the skeptics and the delight of the authors of the program the success has been quite manifest. Inflation has been very low, the budget has in fact been cut, the real wages and the real exchange rate have not gotten vastly out of line. The real wage is now approximately back to its prestabilization level.

Success on the budget is no doubt the most striking achievement. While during the calendar year of 1984 the deficit was 15 percent of GNP, it declined to an annual average of 12 percent in the January-June prestabilization period. For the July-December period, following stabilization, it amounted to only 4 percent of GNP. The budget improvement was achieved by cuts in basic food subsidies and transport subsidies, by an increase in the real value of tax collection and by special property taxes.

Table 8 shows some of the macroeconomic data to judge the progress of the plan. First note the sharp deceleration of inflation: in the ten months after the program was initiated, cumulative inflation was not much more than in the single month of June 1985. Moreover inflation has remained comfortably low. Over the past half-year, inflation has remained at the rate of 1-2 per cent per month. There is no issue of shortages and certainly no idea that inflation is about to break out in a major way as it had at the end of the wage package in early 1985.

The second point worth recording concerns the behavior of money and credit aggregates: M2 has expanded strongly, but exchange rate-linked accounts (Patam accounts, not shown) have declined sharply. This is a typical feature associated with the return of confidence in the domestic currency. Note finally that nominal credit has been on a very tight rein: total credit has expanded by only 6 percent cumulatively over the period and thus, in real terms, has in fact declined.

The third point concerns real wages. Real wages declined in the early

Table 8
Israel: The Success of the July Program

	Inflation	M_2	Credit	Unemployment	Real Wage	Real Exchange
June 85	14.9	7.2	16.8	6.6	100	100
July 85	27.8	56.6	0.4		85	94
August 85-June 86 Cumulative*	21.3	60.0	4.5	7.2	88	96
June 86	1.6	−1.7		7.4	100	97

*** The indices (June 1985 = 100) in the last two columns are period averages**
Source: Fischer (1986) and Morgan Guaranty.

part of stabilization and remained significantly below their pre-stabilization level until earlier this year. By summer 1986 they had, however, increased back to their pre-stabilization level. This is a central problem of the program, because wages had moved far ahead of productivity with government subsidies (and hence budget deficits) making up the difference.

A fourth point worth noting concerns the real exchange rate. The real exchange rate turned toward increased competitiveness during the stabilization. The initial devaluation helped bring about a gain in competitiveness and continuing dollar depreciation since 1985 has helped maintain the gain even in the face of moderate domestic inflation. Without the dollar devaluation over the past year it would have been difficult to defend the fixed dollar exchange rate.

Table 8 shows that the program did involve a rise in unemployment. This is an important point because fear about unemployment has on many occasions stopped decisive anti-inflationary measures. But the rise in unemployment was quite limited. The fact that inflation in July 1986 was down to 0.0 showed that, unlike in Brazil and Argentina, the fact of incomes policy need not inevitably involve repressed and ultimately open inflation.

Policy Issues: The two central policy issues for Israel today are to lock in the disinflation and to embark on a path of strong and sustainable growth. Often policies for growth involve expansion in demand. That is not the case for Israel. Economic slack is not significant, even after the massive fiscal adjustment that has taken place. Resources for growth therefore must come from the government sector and from reduced private consumption. Further budget cutting, and ultimately tax rate cuts are the important priorities this year, next year and for many years to come.[27]

Supply side economics received a bad name in the U.S. because it was primarily a cover for a Keynesian fiscal expansion. But in the case of Israel, crowding-in of investment through reduced budget deficits and expansion in productive capacity via increased incentives are entirely plausible. There are no simple, fast recipes for growth, but it is clear that high tax rates used to finance an extensive system of subsidies can well be counterproductive. Before it becomes possible to cut taxes it will be necessary to cut much more into transfers. Even so it is encouraging to note that Israel has experimented successfully with reductions in marginal employment taxes, reducing the wedge between take-home pay and labor cost to firms.

In a short-run perspective the government needs to decide on its exchange rate policy. So far dollar depreciation has helped offset the impact of continuing, though moderate, inflation. If the dollar stops declining it is vital that the competitiveness of the traded goods sector is not sacrificed. Continued competitiveness is essential because the traded goods sector must serve as a locomotive for the entire economy and because renewed exchange rate speculation and its financial consequences must be avoided.

The availability of U.S. additional aid — $1.5 billion in 1985–86 or the equivalent of 7.5 percent of GNP — makes the exchange rate issue seemingly unimportant. But this perception overlooks the fact that for growth and employment competitiveness of the external sector is essential. At the same time it is important not to allow an overvaluation to occur which will, at some point, have to be eliminated with highly adverse consequences for inflation as, for example, in 1983. The government has recognized these issues by sticking to a fixed exchange rate policy, first on the dollar and more recently on a basket of currencies. The fixed exchange rate commitment can be taken into wage negotiations. The government here can credibly ask for zero wage increases in exchange for a fixed exchange rate. The alternative is to offer indexation of wages and of the exchange rate at the cost of a resumption of a pattern of 30–40 percent inflation.

VIII. The Political Impact

A very interesting and important aspect of the new stabilization programs has been their political impact. They were initiated by governments already sharply weakened by their failure to stabilize. But, where ordinarily stabilization is perceived as politically difficult and harmful these new programs have catapulted the politicians and technicians who initiated them to near-immortality, at least initially.

Public opinion surveys for Brazil, Argentina and Israel provide a ready means of checking on the political success of the stabilization plans. We therefore review some of that evidence here to reinforce the dramatic contrast between the food riots that on occasion emerge in the course of IMF programs and the extraordinarily positive response in these cases.[28]

Argentina: A public opinion survey (Socmerc) has made available an assessment over time of the public response to policy and management.[29] The data reported in Table 9 show the fraction of the sample assessing the performance as positive.

Table 9

Argentina: Positive Response To The Government

(Percent of the sample responding positively)

	1984	1985			1986
	Dec.	May	Aug.	Dec.	Apr.
Austral Plan			74	68	52
Economic Management	19	10	40	35	19
Government in general	46	35	57	52	36
President Alfonsin	72	64	74	71	64

Source: La Nacion

The notable point in this table is the immensely positive response to the Austral Plan and the sharp improvement in government popularity on all counts between May and August 1985.

Moreover, the positive response has been quite persistent. Even after the initial enthusiasm wore off, there was still very substantial support as is evident in the December 1985 rating. At the end of 1985 a public opinion poll showed that 35 percent of the sample felt that the Austral Plan had helped them and that a further 42 percent estimated that it had not affected them significantly. Only 9 percent felt that they had been strongly hurt. Only 18 percent of the sample felt that the Plan should be abandoned.[30]

Brazil: Unfortunately there does not appear to be a continuing public opinion survey for Brazil that follows as in the case of Argentina the public's assessment of economic issues. But the evidence from more isolated surveys does lead to very much the same impression as is conveyed in the case of Argentina.

In immediate "post-shock" surveys 84 percent of the respondents thought the reform was good and only 2 percent felt that it was bad. In the same survey 66 percent of the public felt they would benefit and only 8 percent believed they would be hurt.[31]

In a survey asking for a rating of the President on the scale of 0 to 10 the President received a grade of 6.5 in December 1985, prior to the Plan. By March 1985 his rating rose to a grade of 8.4.[32] It is quite apparent that the President's popularity jumped sky-high, at least in the polls, as a result of the stabilization plan.

The public perceives a distinct improvement in their economic conditions. An ongoing opinion survey reports the following responses to the question "Have things become better or worse since the economic shock which introduced the Cruzado Plan?" and "Is your purchasing power today higher, equal or less than before the economic shock?"

Table 10

Brazil: 1986 Post-Shock Opinion Surveys

	April	May	June	July
	Did Things Generally Improve . . .?			
Yes	56	54	57	46
	Is Your Purchasing Power Higher Today . . .?			
Higher	47	46	44	44

Source: *Folha de Sao Paulo* July 26, 1986 p. 19

A survey following the July 1986 follow-up program (the "pacotinho") showed that 59 percent supported the new measures against only 27 percent expressing a negative opinion. Yet only 35 percent of the survey respondents felt that these new measures would bring them benefits while 49 percent felt they would not.[33]

Explanations: Why do these new programs bring forth such strong public support whereas traditional programs are viewed as a political liability? We see two immediate explanations.

Perhaps the most important aspect of these new stabilization programs is that they occur in a context of sharply accelerating and extreme inflation. It is well-known that the public views inflation as utterly threatening. If this view is true for the moderate inflation experienced in the industrial countries, then it is quite likely even more true for the extreme experiences reviewed here. The strong public reaction observed in this case far exceeds what economists can explain in terms of the economics of inflation.[34] By the same token, price controls are invariably a popular political move any time inflation is perceived as a problem. The move to stop accelerating inflation by controls thus amounts to a well-known recipe in political economy. Deeper research going to the psychology of inflation and controls is therefore certainly warranted.

A related point is the populism inherent in the new stabilization programs. The public is enlisted as price controllers and in this way they are given a direct, personal role. In a Brazilian opinion survey of early March 1986 as many as 50 percent of the respondents said they were actively helping to control prices and another 39 percent said they would do so in the future. Active participation in price controls by the general public is seen as an exercise of participatory economic democracy.

It is striking to note that the public is actually willing to accept the need for sacrifices in order to secure stabilization. A survey in Argentina found that 46 percent of the respondents were willing to make personal sacrifices to help the success of the Plan. Only 8 percent were unwilling to do so.[35]

The second argument for popularity lies in the fact that fiscal stabilization does not involve a reduction in private sector aggregate real absorption of goods and services. The adjustment basically involves only a change in the incidence and distribution of taxation. An inflation tax finances the government during the high inflation period whereas outright taxation finances basically the same level of real government spending after stabilization. Since no current account improvement is required as part of the stabilization, the whole program amounts mostly to a reshuffling within the country of the burden of financing a given government spending.

There may also be redistributions between sectors. For example industries that collect sales taxes (say the tobacco industry in Argentina) lose out when the float disappears, and workers gain from the stability of real wages. These redistributive features of stabilization differ from the case of a country where stabilization requires an improvement in the current account and hence a net reduction in aggregate absorption.

IX. Concluding Remarks

The new stabilization programs in force in Argentina, Israel and Brazil represent a critically important, viable alternative to traditional, orthodox, IMF-style programs. They grasp a central economic fact, the need for coordination rather than sheer slack, as an essential part of stabilization. From a political point of view they are dramatically successful, at least in the first stage, and as such they are feasible.

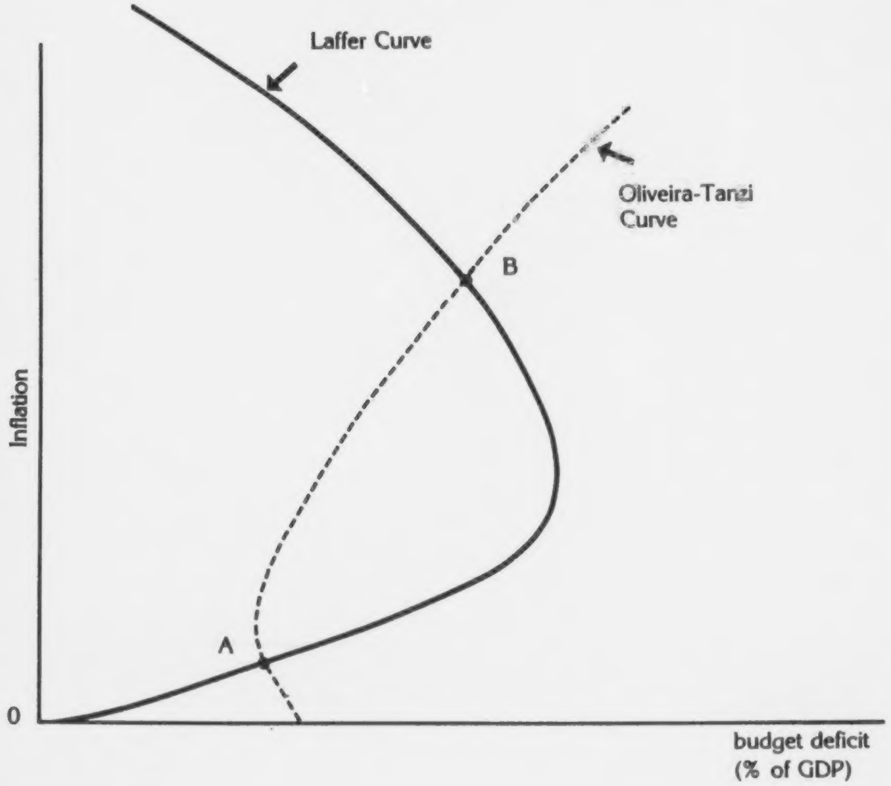
These new programs represent an important advance in macroeconomic policy, but even so they do not offer miracles. There is no substitute for a correction of fiscal disorder, the orthodox part of stabilization. Perhaps surprisingly, governments seem to be unwilling to use the very strong increase in their political standing to follow up on the initial stabilization with a program of enduring, substantial improvement in public finance. This unwillingness is very shortsighted because any program will ultimately buckle under as boom and shortages force a return of inflation. There may be no outright collapse, at least for a long time, but gradually the program tends to melt away for lack of sustainability, credibility and confidence. As a result political support inevitably falls off, and with the loss of support the chances of achieving important changes in public finance fall. The chance of progressing from stabilization to growth thus is missed.

In Argentina, Brazil and Israel a return to sustainable, long-term growth is a serious issue. Investment has fallen off significantly and the supply potential has expanded little. The important changes in public finance required to promote long-term financial stability have not taken place in Argentina, are not in sight in Brazil and may not happen in Israel. The lesson for any other country, for example Mexico, is to recognize that the incomes policy approach to stabilization does not dispense with orthodoxy. But also that it does provide an extraordinary political opportunity in the form of a brief breathing spell and momentum of popular support which can be exploited for the hard task of basic policy reform.

Appendix: Inflation and the Budget

Figure A–l shows on the axes the inflation rate and the budget deficit measured as a share of GDP. The dashed schedule shows the Oliveira-Tanzi effect. As inflation increases the deficit rises because of the inflationary erosion, via lags in collection, of the real value of tax collection. The solid schedule is the Laffer curve for the inflation tax. At very low inflation rates real balances are high, but because of low inflation the inflation tax revenue is also low. As inflation rises the inflation tax revenue first rises and then gradually falls off because at high rates of inflation the

Figure A-1


Laffer Curve
Oliveira-Tanzi Curve
B
A
0
Inflation
budget deficit (% of GDP)

increased cost of holding real balances comes to dominate in that it reduces real money demand.

The important point to note from Figure A–1 is that there are two inflationary equilibria, points A and B. At A inflation is low and the deficit is small while at B inflation and the deficit are large. If an economy were at B it would, of course, be of interest to shift it to A. The problem then is how to achieve, at a low cost, that transition.

Footnotes

[1] This is not the place to offer an elaborate explanation or defense of IMF programs. Yet it certainly must be observed that countries do not go to the IMF for inflation treatment, but rather to gain access to balance of payments financing. The fact that money and inflation are so central to IMF programs stems from the close association between public sector dissaving, financing and the external dissaving. But the link is not completely tight so that it is possible for a country to satisfy the external targets and yet fail on the domestic targets. This fact has led many observers to argue that the IMF should exclusively concentrate on external targets. An entirely different criticism focuses on an unwillingness of the IMF to require coordinated programs of wage, price, and exchange rate programs. The IMF certainly insists on exchange rate programs and even wage programs, as in Brazil's case in the early 1980s. The point of this paper is that there should also be a price freeze. Failure to include the price freeze means that the program lacks coherence and can only succeed by making unemployment high enough to be the coordinating device that a freeze would otherwise provide.

[2] We look at indexation in more detail below in discussing the Brazilian background to stabilization. In that context the shortening of the indexation period from one year to six-months and in the end three-months was a main source of the acceleration of inflation.

[3] How do we know that the economy cannot? That, too, is an issue in game theory. Schelling (1982) has written extensively on how to make threats stick. Ideas involve poison-pill strategies. Governments instinctively shy away from poison-pill strategies of no-return. As a result the public does not believe the fierce anti-inflation rhetoric and therefore the government in turn cannot afford to implement it. The late William Fellner (1976) developed these themes with great authority. See, too, Anti-inflation . . . (1982).

[4] The situation is essentially equivalent to the analysis of wage setting in the General Theory (See Keynes (1936, chapts. 2 and 19). Workers in each industry resist money wage cuts because they cannot be assured that similar wage cuts will be enforced in other industries.

[5] See Simonsen (1986a,b) for a game theoretic formulation where it is shown how players using maxmin pricing reach an equilibrium different from the Nash equilibrium assumed in full information rational expectations models.

[6] See Dornbusch (1986a).

[7] It is named after studies by Oliveira (1967) and Tanzi (1977). Keynes (1923) and other commentators on the inflation experience of the 1920s already highlighted this effect. See Bresciani-Turroni (1937), Graham (1928) and Dornbusch (1985b). On tax indexation in Brazil, prior to the inflation explosion, see Simonsen (1985).

[8] On this point see especially Bruno and Fischer (1986).

[9] The calculation of inflation adjusted deficits is common in industrial countries too. See Eisner (1986) for an extensive treatment.

[10] See Sargent (1982), Dornbusch (1985b) and Dornbusch and Fischer (1986).

[11] There is a difference in the required adjustments depending on the presence or absence of fees. In a system without fees the banking system needs to achieve larger reductions in costs and hence in employment than under a fee-based banking service.

[12] See diTella (1983), de Pablo (1980) and Arnaudo (1979) on the Peronist inflation and the failed attempt to stabilize it with controls.

[13] On the Martinez de Hoz debacle see Corbo and de Mello (1985), Corbo, de Mello and Tybout (1986), Diaz-Alejandro (1981), Dornbusch (1982, 1986a, 1986c), Ramos (1986) and Fernandez and Rodriguez (1982).

[14] There are many precedents for the use of an incomes policy in Argentine stabilization. One of them occurred in the context of the Peronist inflation of the 1970s, another one as recently as 1982 under Alemann.

[15] The most comprehensive treatment of the Austral Plan may be found in Heyman (1986). See, too, the collection of essays in diTella and Dornbusch (1986).

[16] Paul Volcker is said to have played a significant role in achieving IMF and bank acceptance of the plan. He subsequently visited Argentina in the fall of 1985.

[17] In July 1986 the inflation rate was already 6.8 percent per month.

[18] An estimate by *Carta Economica* (July 1986) of the purchasing power of wages reports that the average level in the second half of 1985 was five percent below the first semester and that by June 1986 the purchasing power already exceeded the level of mid-1985. The difference between these estimates and the real data in Table 3 highlight the important, and relatively uninvestigated, issue of finding good economic measures of incomes during extreme inflation.

[19] The expression "heterodox shock" which now is commonly used to describe the Brazilian experience is due to Lopes (1986).

[20] As an example, a promissory note of 1 million cruzeiros maturing April 30th 1986 is worth 770.73 cruzados, not 1000 cruzados.

[21] The program is most comprehensively discussed in Bruno (1986). See, too, Fischer (1985a,b, 1986) and Dornbusch and Fischer (1986).

[22] The options proposed in June 1983 to then finance minister Aridor are reported in Plessner (1986).

[23] Melnick and Sokoler (1984) show that a reduction in output growth, and hence in the growth of demand for highpowered money has an important effect on inflation. Fischer (1982) shows cross country evidence on the ratio of highpowered money increases to GNP. By the standards of his sample the change from 1981-83 to 1984 is certainly very significant.

[24] These foreign exchange losses came primarily from capital outflows. The current account had already improved as a result of the preceding depreciation.

[25] For a detailed discussion of the measures see Bruno (1986).

[26] Difficulties would arise from an agreement for deferred wage increases.

[27] See on the growth issue especially the memorandum by Fischer (1986).

[28] Our analysis focuses on Brazil and Argentina, but we understand that much the same evidence exists for the case of Israel.

[29] SOCMERC is a public opinion survey data base belonging to the consulting firm Aftalion, Mora y Araujo, Nogueira.

[30] Reported in *La Nacion*, January 2, 1986.

[31] *Folha de Sao Paulo*, March 5th, 1986.

[32] *Folha de Sao Paulo*, March 15th, 1986.

[33] *Folha de Sao Paulo*, July 26, 1986.

[34] See Fischer and Modigliani (1978).

[35] Aftalion, Mora y Aruajo and Noguera (1985), p. 8.

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Discussion by Mario Brodersohn

Secretary of the Treasury, Republic of Argentina

Economic Growth, Debt and Trade: The Recent Argentine Experience

I would like to thank the Group of Thirty for the invitation I received to make comments on the Dornbusch and Simonsen paper. It is exceptionally informative and clear in presenting the economic programs of Argentina, Brazil and Israel, so I will use it as the basis to give you more updated information on the Argentine experience.

Before doing that, let me rapidly review the policies that some years ago led our country to external imbalance, analyze then the policies that in seeking external balance led to internal imbalance and describe — finally — how we came to decide to implement the Austral Plan. I will review also the positive results of the Plan and the program for structural reform that the Argentine Government is undertaking to foster economic growth.

Searching for Internal Balance at the Expense of External Imbalance: From the Late Seventies to Early Eighties

During the second half of the seventies, most Latin American governments borrowed heavily in the liquid international financial market in order to pursue ambitious objectives without having to deal with the economic constraints of their own economies. They felt free from the fiscal discipline that the limited scope of their internal capital markets and the structural weaknesses of their balance of payments position had traditionally imposed upon them. They were able to obtain, and many times induced to take, an amount of foreign financing disproportionate to the capabilities of their economies. These loans generally were made on more favorable terms than those in recent financing programs and came with no strings attached. Indeed, borrowing countries' lax domestic policies were matched by commercial banks' lax lending policies — policies, I might add, which enjoyed the political support of the main creditor countries who opted for recycling instead of adjustment to deal with the first oil shock.

During this period, the Argentine Government pursued an externally supported monetary stabilization program in an attempt to restore the economic growth that had eluded the country for several decades. However, the Government failed to cut fiscal expenditures or adopt the measures necessary to improve the efficiency of the economy. Instead, it induced the private sector to borrow heavily from abroad and then was forced to do the same itself. A large inflow of foreign funds, triggered in part by local interest rates higher in real terms than those abroad, overvalued the local currency. Simultaneously, partly to fight inflation, the government tried to open up the economy to more external competition.

The results of this policy were disastrous and are well known. The foreign debt grew enormously; non-productive imports increased massively; local production and exports were discouraged; and capital flight reached unheard of proportions without a corresponding reduction of private sector debt. The accumulated current account deficit reached nearly $10 billion for 1980 and 1981 or 60% of the exports for those two years, while the foreign debt increased by 88%. In short, a complacent international financial market financed policies that it would today consider to be disastrous and outrageous. And words of caution were not heard from international organizations or from creditor governments.

Strategy for External Balance at the Expense of Domestic Imbalance

Beginning with the second quarter of 1981, the Government changed the focus of its economic policies. Balancing the external sector took priority over monetary stabilization. An ever accelerating devaluation policy was the primary response to the external disequilibrium. In the period from February 1981 to December 1982, the nominal accumulated correction of the exchange rate reached 2,200%.

This exchange rate correction had a major economic impact. First, the adjustment in Argentina's external sector was both substantial and rapid. In 1980, the trade deficit was $2.5 billion while in 1983 the surplus reached $3.3 billion and in 1985 $4.6 billion. So, in only five years, Argentina went from absorbing a volume of foreign goods valued at $2.5 billion to giving up resources valued at $4.6 billion. This represented a swing of $7.1 billion in monetary terms or about 12% of 1985 GDP.

Some have attributed these favorable trade results principally to a contraction in imports, rather than to meaningful increases in exports. However, an analysis of what actually happened demonstrates the real magnitude of Argentina's effort to redress its balance of payments through both the contraction of imports and a major expansion of exports.

To analyze the development of Argentina's trade account in the

1980's, it is necessary to review both price trends and the volume of exports. The export volume index has grown steadily since 1980. Between 1980 and 1985 this index increased by 50% and it is forecast that in 1987 it will be 10% higher than 1985. On the other hand, export prices fell by 30% between 1980 and 1985, and are forecast to fall by a further 15% between 1985 and 1987.

This drastic reduction in international prices of Argentina's main export products more than counterbalanced the 50% increase in the volume of Argentina's exports. Table 1, which includes estimates for the last half of 1986 and conservative projections for 1987, summarizes this situation quite dramatically.

Table 1
Argentina: Trade Developments
(in millions of U.S. dollars)

	1980	1984	1985	1986*	1987**
Exports (FOB)	8,021	8,107	8,396	6,987	7,660
Imports (CIF)	10,540	4,584	3,812	4,700	5,350
Trade balance	(2,519)	3,523	4,584	2,287	2,310
Export volume index	100.0	124.2	150.0	142.3	164.9
Export price index	100.0	81.4	69.7	61.2	60.5

* Estimated Figures.
** Projected Figures.

As a result of these export price developments Argentina has incurred and continues to incur huge losses. These losses may be quantified by pricing export volumes at 1984 or 1980 prices. If prices even had remained at 1984 levels, Argentina would earn in 1985, 1986 and 1987 an additional $7.5 billion. And if they had remained at 1980 levels the additional export income would be approximately $11.7 billion.

Table 2 summarizes the actual and projected trade balance results for 1985, 1986 and 1987, and the additional surpluses that would have resulted if 1984 or 1980 prices had prevailed for exported and imported volumes. The table also shows the projected increase in foreign debt estimated for these three years — a total which is significantly less than the losses caused by the fall in export prices.

In summary, over the 1985-87 period, surpluses would have been between $7.5 and $11.7 billion higher had 1984 or 1980 prices for exports and imports prevailed. Of course, these losses have made it more difficult to deal with the foreign debt problem, have generated a need for increased borrowing and have complicated seriously the prospects for increasing

Table 2
Argentina: The Impact of Price Changes in the Trade Balance (in millions of U.S. dollars)

Year	Trade Balance at Current Prices	Additional Surpluses at: 1984 Prices	1980 Prices	Increase in Foreign Debt
1985	4,584	1,320	2,961	1,408
1986	2,437	2,469	3,933	184
1987	2,207	3,658	4,795	3,451
Total	9,228	7,457	11,689	5,643

investment and fostering growth. During this period, the drop in interest rates helped to compensate, albeit only partially, for the fall of international commodity prices.

The search for equilibrium in the external accounts had high costs in terms of creating internal imbalances. The deep adjustment in relative prices and trade accounts carried out over a relatively short time, and in the midst of adverse international conditions, was accompanied by a major contraction of economic activity, a marked acceleration of inflation, and renewed fiscal problems.

In 1981 and 1982, per capita GDP fell 15%, industrial production 20% and real wages followed a comparable downward course. GDP fell mainly at the expense of fixed domestic investment, which fell from 22% of GDP in 1980 to 12.6% of GDP in 1985. Inflation accelerated, reaching an annual rate of more than 1,000% by mid 1985, and the economy became largely demonetized.

External adjustment policies also had significant impact on public finances. The overall fiscal deficit that had hovered around 6% of GDP in 1977-1979, climbed to 13.3%, 15.1% and 16.8% of GDP in 1981, 1982, and 1983, respectively.

There are several reasons for the fiscal problems that were encountered, among them being the increase in interest rates and the amount of debt. The private debt also deserves special mention. The private sector, heavily indebted abroad, was not able to absorb the impact of the depreciation of the domestic currency—2,200% in less than two years. To deal with this, the Government granted subsidies amounting to approximately 60% of the affected private sector debt. A condition of these subsidies, which avoided a crisis of widespread private sector bankruptcies, was the extension of maturities by a minimum of a year. On the maturity of this extended debt, the public sector ended up not only paying the subsidy, but taking over the debt. Partly as a consequence of this, the public sector now holds almost 90% of external indebtedness. This compares with approximately 50% in 1980.

Table 3 shows how the improvement of the trade account was accompanied by a deterioration of the fiscal position and an acceleration in the inflation rate.

Table 3
Argentina: Selected Economic Indicators

	1980	1981	1982	1983	1984	1985
Fiscal deficit as percentage of GDP	7.5	13.3	15.1	16.8	12.8	6.1
Inflation rate (wholesale price index)	57.5	180.2	311.3	411.3	625.7	464.0
Trade balance (in millions of U.S. dollars)	(2,519)	(287)	2,287	3,331	3,523	4,584
Public sector share of total foreign debt (%)	53	56	66	72	79	87

The Austral Plan: The Need to Seek Domestic and External Balance Simultaneously

In mid-1985, the Government launched the Austral Plan to correct internal imbalances reflected in such problems as accelerating inflation, large fiscal deficits, and demonetization of the economy. This goal had to be attained without adversely affecting the improvements already made in the country's external accounts. The Plan was based on the application of a shock treatment in order to lower inflation, close the fiscal gap, and remonetize the economy. It recognized that recoveries up to that time had been short lived, led by consumption and unsustainable because the economic climate did not become attractive to longer term investments. At the same time it was clear that traditional IMF adjustment policies would also exacerbate the existing internal imbalances.

The Plan was based on three premises. First, to reduce inflation it was necessary to reduce the fiscal deficit and carry out a prudent monetary policy. This first premise was a necessary but not a sufficient condition for a country with such a long history of inflation. Consequently, as a second premise, to break inertial inflation it was necessary to freeze both public and private wages and prices and the exchange rate. And third, a monetary reform was required to eliminate indexation.

The success of the Austral Plan exceeded expectations. Inflation went down dramatically. Economic activity, as measured by industrial production picked up sharply and is back to the previous peak levels of 1979-1980. There also was a major correction in the budget. Table 4 shows the dramatic changes that the Austral Plan brought about.

Table 4
Argentina: Impact of the Austral Plan
(percentages)

	1985		1986	
	First semester	Second semester	First semester	Second semester
Average monthly inflation (1)	27.3	2.5	3.6	6.4
GDP growth rate (2)	(3.0)	(6.0)	3.0	5.0
Industrial product growth rate (2)	(8.9)	(11.9)	7.9	12.0
Fiscal deficit (3)	7.8	2.0	1.8	2.6
M2/GDP	6.8	8.1	9.7	9.2

(1) Average of monthly wholesale and consumer price indexes.
(2) Change over same period of previous year.
(3) As a percentage of GDP. Does not include Central Bank.

These achievements, however, were not without cost — they were earned through the sacrifices necessarily entailed in the application of a true austerity program. It is from this period of sacrifice, however, that Argentina can and must emerge.

This is possible because the success of the Plan has created a window of opportunity to consolidate the advances in public finance and to restore conditions for sustained growth in an environment with reduced inflation. The indicators in the table reveal the significant progress made on the fiscal and monetary areas without affecting the external balance of the economy. Growth, however, is now the challenge. The Government recognizes both that fiscal prudence and monetary stability are essential to confidence and investment, and that structural adjustments are a necessary underpinning of sustained growth.

Experience has repeatedly shown that Argentina cannot grow on a sustained basis without structural changes in its economy. Struggles over the distribution of income, the very limited integration of the domestic into the world economy, and the over-regulation of key sectors of the economy have often aborted incipient recoveries. For example, in the past we have seen higher nominal wages designed to stimulate consumption result in accelerating inflation that brought about recession and lower real wages. We have seen wages controlled at depressed levels without producing increased investment or exports and proving politically unsustainable. We have seen that even during periods of reduced fiscal deficits, inflation remained comparatively high because of the oligopolistic pricing of locally produced goods allowed by the isolation of the Argentine economy from world trade. And finally, we have seen development curtailed by over-regulation. In some key cases, state participation impeded the channelling of private savings into sectors where Argentina had substantial competitive advantages, such as gas and petrochemicals. These are only a few examples that demonstrate the need for a program of structural reform oriented towards growth. Confidence, and hence private investment, will not return until investors perceive that there is true stability. Furthermore, growth will not be substainable if the economy does not become more efficient. This is why structural reform must be, and is, so important to our program.

I will now analyze some of the main structural reforms envisaged at the present time. They touch areas as diverse as taxation, capital repatriation, trade in industrial products, agriculture and finance. Allow me to describe the principal reforms in some detail.

Tax Reform, Amnesty and Capital Repatriation

There can be no structural reform in Argentina without tax reform. The previous system was unfair, subject to major evasions and led to distortions in economic activity. With this in mind, the Argentine Government prepared, and the Congress approved, a comprehensive tax reform to widen the tax base and reduce tax evasion.

The tax reform is intended to solve both the policy and the operational problems of the tax system. To attain these goals the reform includes changes in the individual and corporate income tax, in the tax on the capital of enterprises and on the net worth of individuals, in the capital gains tax, in the tax on transfers of bonds and shares, in the stamp tax, in the value added tax and in the excise tax. To improve collection the reform includes the elimination of bank and stock exchange secrecy, the conversion of bearer into registered shares, and the introduction of a compulsory savings scheme.

Other measures designed to minimize evasion and avoidance also have considerable revenue potential. These include: 1) an entirely new system for dealing with small payers of value-added tax (VAT) based on use of a presumptive tax, b) the change in regulations for valuing stocks for tax purposes, c) the revamping of the inflation adjustment system, d) the limitation of allowable fees paid to directors of corporations, e) the curtailment of the ability of corporations to avoid taxes by making loans to shareholders, and f) the increased taxation of royalties and technical assistance transfers.

At its present level of about 28% of gross domestic product (GDP) the overall average tax ratio of Argentina is considerably higher than the average for developing countries. The Argentine average tax ratio has gone up by approximately 5% of GDP over the past year because of the fall in the inflation rate and is expected to go up further by perhaps two percentage points as a result of the full impact of the tax reform. If the inflationary tax of earlier years is not considered, its present level is the highest in Argentine history.

The Tax Amnesty Law accompanies and complements the tax reform. This law would increase tax revenues and eliminate legal restrictions and penalties so as to make possible the repatriation of Argentine capital invested abroad.

Argentina suffered a major negative impact from capital flight during the period 1976-1983, which was financed by the permissive lending policies of commercial banks in the late seventies. This exacerbated the effects of falling commodity prices and high interest rates on the overall economy.

A review of recent BIS data suggests, however, that capital flight has at least been halted, and may have been reversed. For 1984 and 1985, according to BIS data, net assets of Argentine public and private sector residents in reporting banks increased only $0.6 billion and this amount can be accounted for by the amount of reserves that the Central Bank deposited with banks. The policies implemented by the Government have not only stopped capital flight, but have fostered repatriation.

This spontaneous capital repatriation may only be the beginning of a much larger transfer that could help support fundamental positive changes in the Argentine economy. The comprehensive tax and foreign exchange violations amnesty law that the Government has sent to Congress would eliminate obstacles to this capital repatriation. The law would allow Argentine residents to clear up both their tax and foreign exchange regulation violations by paying a one time tax.

Trade Reforms

To restore growth it is necessary to promote trade. Argentina requires both to import and to export more to sustain growth. The trade measures adopted are aimed at promoting export-led growth of Argentine industry, with favorable side effects on the agricultural and service sectors. In adopting these policies we, of course, have attempted to act in a manner consistent with Argentina's responsibilities within the international trading system.

First, to reduce taxes levied on exports the Government has established a tax rebate program that ensures exporters the return of taxes paid on exported manufactured goods. Tax refunds are at 10%, 12.5%, or 15% depending upon the type of export.

Second, to avoid unnecessary costs the Government authorized the automatic temporary import, free of any duty, of commodities and components necessary to produce exports. To benefit from this system exporters have to agree to increase their exports; submit at least a three year export program; and agree to have a foreign exchange balance of 3:1. (That is, three dollars must be exported for each dollar paid abroad for inputs, broadly defined to include royalties, insurance, interest, etc.) For exporters who cannot comply with the 3:1 rule, the Government has established a special temporary import system. This system is automatic although it does not cover all inputs used for these exports.

Third, to stabilize the export exchange rate the Government created a program which allows exporters to protect the proceeds of their contracts from exchange rate fluctuations. This regime, which benefits exporters who enter into long term export contracts, enables exporters to sell export proceeds to the Central Bank at a rate fixed in real terms at the beginning of the transaction. In this way, the Government intends to help reduce the impact of domestic economic measures on exporters who decide to enter into longer term undertakings.

Fourth, to promote exports the Government adopted three financial measures: it granted automatic prefinancing to all capital goods exporters; it granted automatic prefinancing to certain agro-industrial products produced in different regions of the country; and it reduced buyer financing costs.

As a result of implementing all these measures we expect very positive gains in 1987, including an increase of approximately 30% in industrial exports.

Privatization

The Government is committed to reducing the size of the public sector by selling enterprises now in its hands to the private sector. As a general policy it does not consider it desirable to maintain the presence of the public sector in areas that the private sector can handle. It also believes that scarce public managerial and financial capabilities could be put to better use in other areas, such as education, justice and health.

Two principles will guide the privatization effort. First, the Government will ensure that the transfer of companies from public to private hands does not mean the privatization of monopolies. To accomplish this, the privatization of public enterprises will run a parallel course with the gradual deregulation of the related sectors to increase competition and improve efficiency. Second, the funds obtained from the sale of public enterprises will be used to finance high priority productive investments.

To make privatization possible, the Government has sent to Congress a comprehensive law that will provide potential buyers with the protection they need if they are to risk their capital. The Minister of Economy has already announced the privatization of major public enterprises in the steel and petrochemical sectors.

Finally, in this connection, we recognize that development of a more vibrant economy requires reform of those companies that remain part of the public sector. The Government will grant them greater freedom to manage their affairs, particularly with regard to financial, labor and marketing practices.

Conclusion

It is our belief that the steps I have discussed, accompanied by other proposed measures, will refocus the economy towards an export oriented development strategy, restore a climate conducive to private investment and reduce fiscal expenditures. Specific programs for the agricultural, energy, transport and financial sectors are being developed, and in some cases carried out, with the support of the World Bank and the Inter-American Development Bank. In short, the Government is determined to introduce structural changes designed to correct the severe distortions and imbalances within the economy that have limited economic growth for several decades.

Let me summarize by saying that it is clear Argentina as a debtor country has made major advances in strengthening its internal economy and in ordering its external sector, and that genuine sacrifices have been made to achieve this progress. The Government recognizes that more remains to be done to ensure sustained growth and deal with the external sector. To attain this goal, which is essential to any solution of the debt crisis, the Government is taking needed structural measures to unleash the productive forces in the Argentine economy, to foster repatriation of Argentine capital abroad and strongly to reintegrate the country in the community of trading nations.

Discussion by Michael Bruno

Governor, Bank of Israel

Since I have little to argue with the presentation by Rudiger Dornbusch I shall mainly make some supplementary remarks of a more general theoretical nature on the inflationary process and the type of stabilization program discussed here, and then illustrate from the Israeli experience.*

I would first like to point out that the high inflation processes that are being discussed here are of an intermediate species. They are very different from the one or two digit inflation spurts that we have seen in OECD countries in the 1970s, but they should also be distinguished from the very divergent and explosive hyperinflations that have characterized some European countries after the world wars or that we have recently seen in Bolivia. The time profiles of the inflationary process are more like that of a step-function. The inflation rate jumps at a point in time (usually due to some external or internal price shock) and then stays relatively stable for some time before it jumps again (e.g., in the case of Israel it jumped from 30 to 130 percent in 1978-9 and stayed there until 1983, when a new shock set in).

To explain a particular level of the inflation rate one may invoke the theory of the supply and demand for money in a growing economy in which the government is the main source of inflationary deficit finance. The money supply comes from the deficit (being a residual from domestic and foreign bond finance). The demand for this money depends on inflationary expectations, the rate of return on alternative assets and the existence of money substitutes. It can be shown theoretically that the equilibrium inflation rate in a system like this may shift up as a result of an increase in the deficit, a sudden fall in the growth rate (e.g., as a result of an oil shock), an exogenous drop in the demand for money (due to the appearance of new money substitutes), and other factors.

Stanley Fischer and I have used this type of framework to account for some of the 'steps' in Israel's inflationary process during 1965-1982. This is illustrated in Table 1 in which the net money injection to the money base

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* A more detailed analysis along the lines suggested here is given in M. Bruno, "Israel's Stabilization: The End of the 'Lost Decade'?," Falk Institute, June 1986.

(line 6) is calculated. From the percentage ratio of the domestic deficit to GNP (line 4) one subtracts that part of the money and bond finance that is required for growth (line 5, being the product of the domestic financial asset ratio to GNP, line 1, and the GNP growth rate, line 3). Dividing that number by the money base (i.e., divide line 6 by line 2, both are in terms of percentages of GNP) one gets a ratio (line 7) that in a steady state equilibrium should equal the inflation rate (line 8). Thus one may roughly account for the first jump in inflation in the early 1970s (col. 2) as a result of a rise in the government deficit, the second step after the 1973 oil shock (col. 3) representing a drop in the GNP growth rate and the next jump in 1978-80 (col. 4) as resulting from the appearance of PATAM, indexed bank deposits.

The above representation has to be supplemented by an account of the dynamics and stability of the inflationary process. This depends on the nature of expectation formation and the nature of indexation mechanisms in the economy. The higher the inflation rate the more rapidly will wages and the exchange rate (as well as expectations) be adapted to the higher inflation rate, because the costs of not doing so get higher and higher. The existence of these indexation mechanisms explains why a shock to the price system will end up in a higher inflation plateau. Their speed of adjustment will determine whether once perturbed the inflation rate will return to its previous equilibrium or shift to a new level.

Both the budget finance theory and the above stability considerations turn out to be relevant in explaining why a stabilization program starting from a high inflation level has to involve both the budget, being the source of the inflationary finance, as well as direct intervention in the wage, exchange rate and price adjustment mechanism. It can be shown that under certain conditions a system of the kind described may have multiple (stable) equilibrium inflation rates for any given government deficit finance ratio. An example of dual equilibria can be taken from Table 1, comparing col. 2 and col. 6. In spite of being on the same net government injection ratio (see line 6) inflation rates in 1968-73 and in 1984-85 were wildly apart. In the latter period (1984-85) inflation was shooting up to a new quasi-stable plateau. Besides dealing with the budget deficit, stabilization requires a shift at once from a high to a new low-level equilibrium (see figures for the post-program period in col. 7 of Table 1; detailed quarterly figures are given in Table 2). This is where the synchronized freeze on wages, exchange rate and prices plays a crucial role. Also the newly achieved low-level equilibrium has to be made stable, a point to which I shall return.

It is interesting to note that the domestically financed part of the deficit (and the net injection ratio) had already come down sharply one or two years before the program was launched. Does this mean that all that was needed was the synchronized wage exchange rate and price freeze? The

Table 1

Israel: Government Injection to Money Base and the Rate of Inflation, 1965-1986
(Percentages of GNP)

	1965-1967 (1)	1968-1973 (2)	1974-1977 (3)	1978-1980 (4)	1981-1983 (5)	1984-1985:2 (6)	1985:3-1986 (7)	Hypothetical equilibrium (8)
1. Financial asset ratio to GNP	(0.5)	0.6	1.0	1.1	1.3	1.2	1.3	1
2. Percentage money base to GNP	12.5	13.4	9.8	5.2	2.7	2.1	6.1	8
3. GNP growth	3.2	10.3	2.6	3.5	2.3	2.0	(1.0)	4
4. Domestic government finance ratio	2.2	8.6	7.3	9.3	8.9	4.9	3.1	4
5. Of which: Growth factor (1. × 3.)	1.6	6.2	2.6	3.9	3.0	2.4	1.3	4
6. Net injection (4. − 5.)	0.6	2.4	4.7	5.4	5.9	2.5	1.8	0
7. Net injection/Money base (6./2.)	5	18	48	104	219	119	30	0
8. Inflation rate	5	11	40	97	141	385	25	0

Note: This table is an extension of Bruno and Fischer (1986), Table 4, which covered the period up to 1983 [columns (1)-(5)].

Table 2

Israel: Key Indicators 1980-1986

	Mean 1980-1984	1984 (during year)	1985			1986		
			Jan.-July	Aug.-Sept.	Oct.-Dec.	Jan.-March	April-June	July-Aug.
a. Prices, exchange rates and wages (monthly percentage rates)								
1. Consumer prices	8.7	15.2	14.0	3.5	2.1	0.6	2.1	0.6
2. $ Exchange rate	8.8	15.9	13.6	0.2	−0.1	0.0	0.0	0.0
3. 5-currency exch. rate	7.5	15.3	15.3	0.7	2.0	1.5	0.5	July 2.0 Aug.* 0.0
4. Nominal wage	9.0	16.5	11.0	0.3	4.5	6.3	4.1	—
b. Money and credit (monthly percentage rates)								
1. Total bank credit	9.1	16.8	13.9	6.9	2.9	3.4	3.3	4.0
2. Quasi-money (M3)[e]	10.7	15.9	13.0	3.5	1.9	2.3	−1.0	2.3
3. Means of payment (M1)	8.0	13.4	11.8	16.2	6.7	15.7	1.0	6.4
4. Interest rate (end-of period level)		16.1	21.0	14.1	7.2	3.9	3.6	3.6
c. Relative price levels (1980 = 100)								
1. Real exchange rate (new basket)[a]	94	92	103	110	105	103	98	97
2. Real wage (gross)	108[b]	116	113[c]	95	95	108	113	—
3. Real wage (after tax)	109[b]	114	114	99	103	117	120	—
d. Budget deficit (% GDP)	10[b]	15	12[c]	5[d]	4	3	1	
e. Unemployment rate (%)	4.9[b]	5.9	6.0[c]	7.8[d]	6.6	7.1	7.9	—
f. Balance of payments basic balance (corrected) ($ bn.)	−0.1[b]	−0.7	−0.7[c]	1.5		0.2	—	—

* On August 1, 1986 a new basket was adopted:

a. Relative wholesale price of major trading partners (new basket of 5).
b. Mean, 1980-83.
c. Mean, Jan.-June 1985.
d. Mean, July-Sept. 1985.
e. Money and liquid assets, including PATAM.

answer is that the sharp budget cut was needed for balance of payments reasons, a point that I believe is overlooked in Rudiger Dornbusch's theoretical and empirical analysis. To give credibility to exchange rate stabilization, the balance of payments has to be put in order. The government deficit may thus have to be cut in order to reduce foreign borrowing directly.

The importance of the latter point can be seen from the analysis of the government budget and its finance given in Table 3. In 1983, in the wake of the Israel bank share crisis, domestic net debt finance abruptly came to a halt and increased foreign borrowing by the government took its place (shown under foreign exchange sales in line 8). The main change that took place between the period immediately preceding the program (1984 and the first half of 1985) and the second half of 1985 was the shift from foreign finance to domestic tax finance of the budget (lines 2 and 8).

Let us return to the stability issue. Having rationalized the freeze as a drastic move from a high level to a new low level inflationary equilibrium how can the latter be made stable? A major element in the Israeli case has been the incomes policy game under which the government announced its willingness to stabilize the exchange rate provided that the trade unions stabilized wages. There was even a credibility test in this game which took place a few months after the program was launched. In expectation of continued exchange rate accommodation employers in some export industries yielded to pressure and raised wages by more than had been agreed. When the expected devaluation did not occur losses forced some of these industries to reduce wages.

The introduction of price controls added credibility to the program in its early stages but just as important has been a process of gradual price decontrol under which most goods have already been decontrolled at the time of this discussion. This took place without any effect on the actual price level and has helped to dispel the view that prices are held down 'artificially'. Another factor that is important in trying to stabilize the newly established low-level inflation is a return to wage indexation agreements that are consistent with low, rather than high, inflation. Thus the cost of living adjustment on wages now takes place whenever the price increase exceeds a cumulative 7% (i.e., every five months of so, rather than the previous monthly adjustment) and the adjustment coefficient is down to 70%.

There are institutional and political factors that may help maintain relative stability, once it has been achieved. A follow-up committee of experts meets on a weekly basis and monitors the program and may thus introduce corrective mechanisms. Finally there is the public which has a vested interest in keeping the newly achieved relative stability from falling apart. The virtual elimination of the black market in foreign exchange may have been a good measuring stick for the program's credibility.

Table 3

Israel: Domestic Deficit of Public Sector (including Bank of Israel) and its Financing, 1980-1985
(Percent of GDP)

	1980	1981	1982	1983	1984	1985		
						Total	Jan.-June	July-Dec.
a. Components of Deficit								
1. Domestic expenditure	51.0	53.8	54.1	51.5	50.0	48.4	50.2	46.7
2. Taxes	44.7	44.0	47.5	48.1	40.9	46.6	45.0	48.2
3. Deficit (excl. interest)	6.3	9.8	6.6	3.4	9.1	1.9	5.2	−1.5
4. Interest (adjusted)	10.2	5.8	6.1	4.3	3.5	5.3	5.8	4.8
5. Domestic deficit (3. + 4.)	16.5	15.6	12.7	7.7	12.6	7.2	11.0	3.3
b. Finance of Deficit								
6. Base money creation	2.1	2.1	1.8	2.4	3.1	6.8	2.5	11.1
7. Domestic net debt[a]	10.6	11.9	8.3	0.2	0.4	−2.1	3.7	−8.0
8. Foreign exchange sales	4.3	2.0	2.7	6.7	9.0	3.7	6.3	1.1
9. Interest on money base	−0.5	−0.4	−0.1	−1.6	−0.1	−1.2	−1.5	−0.9

[a] Financial asset formation (including PATAM) net of public credit to private sector.

Source: Bank of Israel, *Annual Report 1985*, Table H-6.

In spite of the obvious success of the program in getting inflation down quickly and keeping it there for more than a year one should keep in mind that a 20% annual inflation rate is still very high. Real wages have gone up too fast and only a government social security tax concession has helped keep production costs from rising excessively. The budget is coming under pressure and even if it is kept in balance one should remember that the cost is a tax rate which is among the highest in the world. Resumption of growth dictates a far reaching tax reform which cannot be brought about without a substantial cut in government expenditure, a feat which so far looks politically unreal.

Discussion by G. G. Johnson

Chief, Stand-by Policies Division, International Monetary Fund

Let me say at the outset that I'm grateful for the opportunity to comment on this paper, which is a wide-ranging and thoughtful piece. That being said, I found the paper somewhat confusing — I would read along, nodding agreement with the soundness of the policy advice being given, and would think how much this is in line with thinking in the Fund. Yet every time I turned the page I would see yet another reference to how much all this contrasted with the Fund's approach. So let me focus on this issue. I won't discuss the economics — I agree with most of it, although Dornbusch and Simonsen occasionally seem to be edging into the poets corner of their paradigm.

The paper gets off on the wrong foot right at the outset, by implying that the Fund is somehow unhappy about countries taking what they call the heterodox approach. In fact the Fund has no bias against the prices and incomes policies inherent in this approach. It is true that we are not always enthusiastic about such policies in other contexts — but that is when they are proposed by poets, who do not see the need to correct the fundamentals at the same time. In fact the Fund has often advocated prices and incomes policies, precisely as a way of realigning inflationary expectations quickly at a time when the fundamentals are being corrected. Freezing the exchange rate may also be endorsed: the Fund has a long tradition of encouraging countries to aim for exchange rate stability, as long as that is consistent with a country's macroeconomic policies and objectives.A declared objective of exchange rate stability, in fact, can sometimes help countries win political acceptance for corrective policies. Moreover, the Fund has in fact worked closely with some country authorities in developing the details of heterodox approaches.

More generally, it is important to bear in mind that the Fund makes its resources available in support of an adjustment program adopted by the member country. In doing so the Fund has an obligation to see that its resources are used in appropriate pursuit of external adjustment, but this criterion may be satisfied by a wide range of strategies and approaches. The

Fund will often advise a country that a particular strategy appears to be the best choice under the country's circumstances, but if the member has an alternative strategy that, while perhaps less than optimal in the view of the Fund, offers strong prospects of achieving a satisfactory external adjustment, the Fund will provide financial support.

Thus the Fund by no means urges governments to adopt the gradualist approaches that Dornbusch and Simonsen criticize. In fact we generally recommend rapid implementation of comprehensive policy measures. But the Fund does not dictate adjustment strategies, and when governments feel uneasy about undertaking such bold approaches, as they often do, we can support more gradualist approaches to achieving external adjustment.

Another aspect of this issue is that countries' adjustment programs have a variety of objectives besides the external ones; in the present context, for example, the objective with respect to reducing inflation is important. The Fund's support, however, is focussed on the external objectives. While far from indifferent to the country's other objectives, in general the Fund will not require that, for example, the country adopt a particular inflation target; only if the member's objective was clearly inconsistent with external adjustment (as would obviously be the case if hyperinflation threatened) would the Fund decline to support the program. Thus while the Fund provided financial support for the gradualist approaches adopted by Argentina and Brazil in 1983, we also provided support for Argentina's recent "heterodox" program, and would support other countries' heterodox programs, provided the overall policy package was consistent with achieving the needed external adjustment.

Against this background, what can be said about the Fund's support for, say, Brazil's orthodox program in 1983? On the external side it is clear that Brazil did manage to deal with the critical problem it faced at that moment — the cutoff of international bank lending. Its active exchange rate policy *did* turn around its current account. This happened with only a brief interruption of growth — but at the same time inflation got worse. Whatever else was involved in that outcome, certainly the Fund staff has reason for humility — we did not fully understand just how much inflationary inertia was implied by the pervasive indexation — but I'm not sure that in 1983 anyone else did either. By 1984, however, there was general recognition that rapid progress in deindexing was essential.

With benefit of hindsight, would we say that the Fund should have been advising the Brazilian authorities to adopt a shock approach back then? I'm not sure of that, either. Dornbusch and Simonsen, echoing views that Professor Arida has expressed on former occasions, argue that one essential element in public acceptance of the shock approach is such a degree of public despair at inflation that people are willing to accept the risks involved in abrupt disinflation — that the game of musical chairs involved in trying to keep up with the inflationary spiral has got so exhausting that everyone is yelling stop, and is willing to take the chance of ending up without a chair. But perhaps the public was not ready for that in 1983? Bear in mind that in its 1983 program Brazil made quite a bit of progress on the fundamentals — which meant that it was less likely that anyone would end up without a chair when the cruzado plan was adopted.

Publications

Reports:

Toward a Less Unstable International Monetary System
The Reserve Assets Study Group

Foreign Exchange Markets Under Floating Rates
The Exchange Markets Participants' Study Group

Balance-of-Payments Problems of Developing Countries
The Capital Movements and the Growth of International Indebtedness Study Group

The Outlook for International Bank Lending
The Capital Movements and the Growth of International Indebtedness Study Group

Reserve Currencies in Transition
Robert V. Roosa, et al.

How Central Banks Manage Their Reserves
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How Bankers See the World Financial Market
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Foreign Direct Investment 1973-87
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The Foreign Exchange Market in the 1980s
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Countertrade in the World Economy
Robert V. Roosa, et al.

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Rudiger Dornbusch & Mario Henrique Simonsen, with discussion by Mario Brodersohn, Michael Bruno, G.G. Johnson

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R5025-1.19F 7/87

Finance for Developing Countries

Alternative Sources of Finance

Debt Swaps

Richard A. Debs
David L. Roberts
Eli M. Remolona

Group of Thirty
New York & London

About the Authors

Richard A. Debs is a Member of the Group of Thirty and President of Morgan Stanley International Incorporated. David L. Roberts is an Assistant Vice President, Federal Reserve Bank of New York, and Eli M. Remolona is an Economist at the Federal Reserve Bank of New York.

The study group on Alternative Sources of Finance for Developing Countries was set up by the Group of Thirty as a contribution to its general work on international economic and monetary issues. Publication of this Report does not imply endorsement by the Group of any of the views expressed.

Finance for Developing Countries

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Published by
Group of Thirty ©
New York and London
1987

Foreword

In 1984, a study group was formed under the auspices of the Group of Thirty to review the external debt problems of the developing countries and to explore the possibilities for alternative ways of financing the development of those countries, apart from commercial bank loans. At that time, the debt problem had become critical, the rescheduling of existing bank debt had been initiated, and it was becoming clear that there would be a substantial need for additional funding to support minimum levels of growth in the developing countries. It was also clear that the additional funding would not be forthcoming from the commercial banks in the amounts required. The objective of the study group was to explore alternative sources and means of finance that might increase and enhance the flow of external funds to the developing countries in order to meet their ongoing development needs.

Participants in the study group included the following individuals, all of whom participated in their personal capacities:

Richard A. Debs, (Chairman)
President, Morgan Stanley International Incorporated

Geoffrey Bell
President, Geoffrey Bell & Company

Robert Bench
Deputy Comptroller of the Currency, U.S. Treasury

Robert Callander
Vice Chairman, Chemical New York Corporation

Andre de Lattre
Former Managing Director, Institute of International Finance

Richard Erb
Deputy Managing Director, International Monetary Fund

Maurice Greenberg
President & Chief Executive Officer, American International Group

Jose Angel Gurria Trevino
Director General of Public Credit, Secretaria de Hacienda, Mexico

Abdulatif Al-Hamad
Chairman, Arab Fund for Economic and Social Development

Frank J. Hoenemeyer
Retired Vice Chairman, Prudential Insurance Company of America

Eugenio Mendoza
President, Empresas Mendoza, Venezuela

Eiichi Matsumoto
Senior Managing Director, Bank of Tokyo

David Mulford
Assistant Secretary for International Affairs, U.S. Treasury

Ralph Pfeiffer
Former Chairman of the Board, IBM World Trade Corporation

Sir William Ryrie
Executive Vice President, International Finance Corporation

Yoshio Terasawa
Executive Vice President, Nomura Securities Co.

Marina Whitman
Vice President & Group Executive, General Motors Corporation

Joseph Wood
Vice President, World Bank

Minos Zombanakis
Chairman, Gise, AG

The study group also had the benefit of participation from time to time of the following individuals:

Michael Barth
Senior Investment Officer, International Finance Corporation

Joel Bergsman
Senior Economist, International Finance Corporation

Edwin Deagle
Former Deputy Director, Rockefeller Foundation

Eugene Gonzalez
Advisor, Morgan Stanley International Incorporated

Andrew Hilton
Former Editor, International Reports

Anthony Loehnis
Executive Director, Bank of England

Priscilla Newman
Administrative Officer, Brown Brothers Harriman & Co.

Guillermo Ortiz
Alternate Executive Director, International Monetary Fund

Eli M. Remolona
Economist, Federal Reserve Bank of New York

Robert V. Roosa
Partner, Brown Brothers Harriman & Co

Robert Pringle
Former Executive Director, Group of Thirty

David L. Roberts
Assistant Vice President, Federal Reserve Bank of New York

Richard Richardson
Director, International Finance Corporation

Vance Van Dine
Advisory Director, Morgan Stanley & Co. Incorporated

Christine Wallich
Senior Economist, World Bank

Henry Wallich
Former Governor, Board of Governors of the Federal Reserve System

H. David Willey
Advisor, Morgan Stanley International Incorporated

During the course of its study, the study group had the benefit of several staff papers prepared for its use, one of which was a paper on debt swaps by David L. Roberts and Eli M. Remolona of the Federal Reserve Bank of New York. This paper explored a financing technique that might enhance the flow of funds to the developing countries. In view of the increasing use of this technique in connection with developing country debt, the Group of Thirty is now publishing a revised version of that paper.

This report also includes a summary of the perceptions and findings of the study group prepared by its Chairman, Richard A. Debs.

David Holland
Executive Director

Study Group on Alternative Sources of Finance for Developing Countries

A Summary Report*

Richard A. Debs, *Chairman*

When it was formed in 1984, the Study Group's objective was to attempt a long term view of the debt problem, to look beyond commercial bank lending and the rescheduling of it, and to explore possible sources of external finance that might serve as alternatives to the conventional commercial bank syndicated loan facilities, which have been the principal source of external funding for the LDCs in recent history. It was then the Study Group's view—borne out by subsequent events—that the amount of new funds available through commercial banking channels would be limited, and in any event would not be adequate to meet the financing required to sustain a reasonable level of growth—however those requirements might be defined and measured. The task for the Study Group was to consider and explore alternative sources, channels, mechanisms, and techniques that might assist in meeting the external financing needs of the LDCs as commercial bank sources diminished in relative importance.

The Study Group found it useful to view sources of external finance for development purposes as falling into three categories, defined according to the source of funds. The first comprises commercial bank credit, through a banking system which functions as an intermediary. The extension of commercial banking credit for LDC financing in the last decade has been primarily in the form of medium-term, floating rate, syndicated loans. The second comprises all other private sector sources of finance in which commercial banks do not act as intermediaries, but where credit is extended by other private sector parties in the role of lenders or investors. This category involves the use of financial instruments of all kinds in the capital markets as well as direct investment by business enterprises. The third category includes all governmental, or official, sources of finance. These include government overseas development agencies and funds functioning on a bilateral basis, and multilateral agencies such as the World Bank or IMF.

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*This summary does not necessarily reflect the views of each of the participants in the study group, nor of the institutions with which they are affiliated.

The original focus of the Study Group was primarily on the second category—private sector non-bank sources. The use of normal commercial bank syndicated loans was clearly not going to meet the ongoing needs of the LDCs for development finance, and the Study Group wanted to explore the potential for alternative sources from the private sector. They viewed the third category, of official finance, as a residual category.

Enhancing the use of bank loans

In their analysis, the Study Group looked first at possible mechanisms for enhancing the use of existing conventional commercial bank loans. The Study Group did not focus on rescheduling techniques *per se*, nor was it interested in the various proposals put forth in recent years for the transfer, in effect, of the LDC debt to official sources. Rather, it was interested in market based mechanisms for increasing the liquidity or otherwise improving the attractiveness of the conventional commercial bank loans, with a view to encouraging incremental funding.

Without attempting to describe them in detail, it may be noted that the main techniques considered were the sale or exchange, or swaps, of LDC loans on the books of commercial banks; possible mechanisms for converting LDC loans on the books of commercial banks into equity investments in LDCs; and techniques for currency switching or changing the currencies in which commercial bank loans to LDCs are denominated. The group also looked at co-financing arrangements through which commercial bank loans could be paired with loans by the IBRD or the regional development banks as means of activating additional commercial bank participation.

Background papers were prepared on these techniques, and the work on both loan swaps and equity swaps was undertaken by David Roberts and Eli Remolona of The Federal Reserve Bank of New York. In view of its particular relevance at this time, it is presented here in the form of the attached study on Debt Swaps.

As stated in the Study Group document in March 1986, "The concept of conversions of debt to equity holds out considerable promise and should be pursued vigorously by lenders and borrowers alike, but there are clearly limits to the number of opportunities for equity investment that may be available through this mechanism".

In general, the Study Group believed that all of these techniques for enhancing the use of existing loan portfolios should be pursued in that they may serve to provide a measure of assurance to commercial bank lenders that there is greater liquidity and flexibility in their LDC loan operations, and thereby encourage greater participation in new lending. These techniques would appear to be effective in doing so in cases where the borrower has made progress toward re-establishing access to new funding; they may not have as significant an impact in other cases.

Other lending facilities

Apart from financing mechanisms focussed on outstanding bank loans, the Study Group also reviewed the use of alternative commercial bank facilities, other than medium-term syndicated bank loans, that might be utilized with greater emphasis or in innovative ways, to channel additional finance to the LDCs. One general area involved trade finance, and a re-emphasis on this traditional form of commercial bank facility; another focussed on project finance and alternative techniques that might be involved there as well, including secured asset financing, leveraged leasing, and the greater use of co-financing. Co-financing was also reviewed as a separate topic in connection with World Bank financing innovations. With respect to trade finance, the Study Group reviewed traditional channels, both private sector and official export credit, and also explored the use of private sector insurance coverage and the use of hedging instruments, such as options and futures, to manage risk better.

In general, the Study Group was of the view that these facilities had not been adequately utilized and developed in the last decade in connection with LDC financing, and that they held the potential for meeting a part of the overall financing needs of LDCs in the future if they were actively pursued, with opportunities for applying innovative financing techniques to traditional instruments in appropriate cases.

Liability management and innovations

The Study Group also reviewed the general question of liability management from the point of view of the borrowing LDCs and their use of financing innovations that have been developed in recent years.

Chief among these have been interest rate or currency swaps, which can be employed with advantage both as liability management tools and as funding mechanisms. Other financing vehicles were also reviewed—such as those involving the use of the options or futures markets. In all of these cases, attention was focussed on areas in which official investors, such as the World Bank, might play a supporting role.

Based on its studies, the Study Group felt that these innovations should be further utilized by the LDCs and could be very effective tools both in terms of managing existing debt and in terms of achieving more attractive terms for new borrowings.

Capital markets

Another major category of alternative finance reviewed by the Study Group is that of the worldwide capital markets. The Group examined many facets of these markets, both national and international, public and private, debt and equity, etc., and paid particular attention to the far-reaching changes that have taken place in these markets in recent years and their implications for LDCs.

Bonds

The Study Group reviewed in-depth studies of the history of the bond markets and prospects for the future use of those markets by the LDCs. Historically, the international capital markets have been a source of finance for developing countries for a far longer period than has commercial bank lending. However, for various historical reasons, including the rapid development of the commercial bank syndicated loan market in the 1970's, the bond markets for LDC credits atrophied to a large extent. When commercial bank loans were readily available, LDC borrowers were not generally interested in the bond markets; when commercial bank loans became less available after 1981, it was not easy to re-enter those markets.

In analyzing the prospects for expanded capital market financing, the Study Group focussed on the extensive structural changes that have taken place, noting the rapid overall growth of the bond markets world wide during the last few years, as well as the development of many new markets and the proliferation of new financing instruments in those markets. The Study Group also noted the beginnings of what might be a trend in an increasing use of the bond markets by LDC borrowers, recognizing also that such borrowers were among the more creditworthy LDCs. The Study Group believed that the LDCs in general should focus again on the international bond markets as future prospective sources of external financing in order to be in a position to access the wide variety of markets and instruments that now exist, as opportunities arise and as their credits improve.

Equity capital

The other major component of capital markets examined was that of the equity markets. The Group focussed first on foreign investment in domestic capital markets of the LDCs, which has developed at a rather surprising pace over the last several years. Until recently, the securities markets in developing countries were virtually unknown in the international financial community. However, this has begun to change as the idea of broad international diversification is becoming one of the basic tenets of portfolio management. Companies in a number of the stronger newly-industrialized LDCs such as Singapore, Malaysia, Korea and Mexico, have already been included in some institutional portfolios, and the number of such stocks being followed by U.S. and other securities analysts is growing rapidly.

While investment directly in LDC company shares is growing significantly, a large portion of foreign equity investment in LDCs is accounted for by off-shore country funds. In essence, these are mutual funds composed of shares in LDC companies and sold in the markets of developed countries. Recent examples are the Mexico, Korea, Malaysia and Thailand funds. The IFC has been very active in encouraging and sponsoring these types of funds, as well as portfolio investment in LDC capital markets generally, and has been very successful in its efforts. The Study Group believes that country funds have an important potential for attracting new money to LDC markets, recognizing that the amounts involved may be limited.

The Study Group also noted the growing moves to privatize parts of the public sector in many developing countries. Where such companies are profitable, the sale of these shares would present an opportunity to make a concerted effort to attract foreign investor interest.

In general, the Study Group endorsed initiatives to foster portfolio investment in LDCs. It noted, however, that there are a number of factors which presently inhibit the growth of such investment. Many LDCs, for example, still prohibit foreigners from investing in their markets, while others impose restrictions on the amount or type of stock a foreigner can buy.

A second inhibiting factor is that several developed countries have regulations which limit the percentage of a portfolio which an institutional investor may place abroad. The Group felt that these regulations could be reviewed and, that consistent with prudential considerations, limits might be raised or exemptions granted for certain types of LDC investment.

Finally, it goes without saying that the equity market will provide significant new funds only to credit-worthy entities in credit-worthy countries, and only where the climate for foreign investment is hospitable. In this connection the Study Group suggests that LDCs consider taking the following steps:

- removing foreign exchange and other restrictions associated with foreign portfolio investment;
- requiring equal treatment of foreign and domestic investors;
- removing or reducing capital gains taxes and withholding taxes on dividend income;
- removing or shortening the minimum period during which foreign portfolio money must remain invested;
- improving and standardizing the provision of company information and auditing requirements.

Although necessarily limited to the higher-income countries, the Study Group believes that over the longer term, cross-border equity investment in LDC markets ought to be encouraged and could provide a growing long-term source of incremental funding.

Flight capital

The Study Group also looked at a closely related subject—the encouragement of the repatriation of "flight capital" as a source of funds. The issue, which is an important one, has several dimensions. The first involves reasons why capital leaves an LDC in the first place. The basic answer is that investments abroad may be much more attractive, particularly if an exchange rate regime encourages conversion. This dimension of the problem relates to exchange rate policies and the removal of inducements for capital flight. The other dimension of the question relates to the possible means for repatriating investments abroad by means of especially targeted funds or other inducements.

The problem is a difficult one to define, let alone resolve. In these days of deregulation, liberalization of financial flows, and the integration of world capital markets, investors' funds will tend to flow into markets and instruments that are relatively more attractive than others.

The Study Group was not prepared to endorse the kind of capital controls that are necessary to staunch the outflow in the first instance. Rather, they thought that first priority should be given to exchange rate adjustments and in the longer run, to laying the base for making investments within the country as attractive as those available abroad. This could be achieved by general conditions, such as the development of an attractive local stock market; or by mechanisms targeted at expatriate funds, such as special bond issues.

Foreign direct investment

The Study Group reviewed in depth the mechanism of foreign direct investment (FDI), both as a potentially major source of financing and as a medium for longer term development. Historically, FDI has played an improtant role in both these respects.

In the last few years, FDI flows have been relatively depressed. After reaching a peak of $14 billion in 1981, they fell to under $10 billion a year in 1983-86. This decrease was caused in part by cyclical influences—the recession of the early 1980's, low commodity prices—and also by government policies and financial conditions in the LDCs that have deterred FDI from playing its classical role as an engine of economic development.

At present, however, economic and political circumstances would appear to favor a return towards the classical pattern where FDI constitutes a principal channel for the transfer of resources from developed to developing countries. The emphasis on large-scale state enterprises, and the ideological hostility toward the multinational corporation, have lessened. A new appreciation of the contribution that private capital (both foreign and domestic) can make to development is evident in both host country governments and the officials institutions.

The Study Group believes that foreign investment has an importance well beyond any immediate contribution it makes toward financing payments deficits. Indeed, FDI cannot be seen as a "quick fix" for payments crises. But by improving the competitiveness and efficiency of host economies it can clearly in the long run enhance export potential and credit-worthiness—in the broader sense. The Study Group viewed this as perhaps the most important contribution of FDI to development.

The Study Group reviewed a set of policies that might be followed by both home and host country governments to encourage FDI which was based on a survey of major corporations conducted by the Study Group in 1985. In brief, it argues that policy should be directed at encouraging investment in general (whether by domestic or foreign investors), with the emphasis on creating a stable economic and financial environment rather than on specific incentives for foreign companies. The companies themselves say they often do not want such incentives or disregard them. Also, specific incentives discriminate against domestic investors.

The Study Group regarded FDI as potentially the most important channel of additional private financing for developing countries. Given appropriate policies by the LDCs, and assuming that protectionist pressures are resisted in the OECD countries and that the world economy continues its gradual recovery, the Study Group believed that FDI could increase significantly. In such favourable conditions, it could in time regain its previous levels and possibly even reach $20-25 billion. However, at present companies are extremely cautious in making new investments; many suffer from excess capacity and depressed demand in their main overseas markets. So it is unlikely that FDI will reach its full potential in the near term; it is equally unlikely that the volumes of new external finance provided by this source alone will come close to meeting the requirements of the LDCs.

Insurance and guarantees

The Study Group reviewed the possible role of insurance and guarantees in supporting each of the alternative financing mechanisms it studied as well as their potential direct role in facilitating funds flows. They looked both at private sector insurance in support of these private sector mechanisms, and at official insurance schemes.

Historically, insurance coverage with respect to international financial flows has primarily been a governmental function. With recent innovations in the financial services industry, however, the role of private sector insurance has become increasingly important. The main development of this trend has been in domestic markets, primarily the United States, where insurance coverage is now available to cover a wide variety of financial instruments.

In terms of international transactions, private sector insurance coverage has also been increasing, although less dramatically. One area of coverage has been in trade finance, where programs such as TRAFCO can provide insurance coverage for export loans and also provide liquidity through the sale of "pass-through" certificates to investors.

Private sector insurance is also available to cover investments in other countries. They supplement the official programs, discussed below, and have the potential for playing an important role in the future as investments in LDCs begin to increase as conditions improve.

One current problem that has arisen is the treatment of insurance in the case of rescheduling of debts where insurance coverage may be involved. In order to encourage insurance companies to remain in this business, care should be taken that they be treated equitably in rescheduling operations.

Apart from coverage by insurance companies, risk management techniques are also available in the private sector through the use of options and futures and related hedging techniques. These can be used in export finance, for example, in setting a floor or ceiling on a commodity price; or they can be used on financial instruments, where a given interest rate can be "insured". They are in widespread use in domestic markets, but not yet employed in LDC finacing operations.

With respect to governmental schemes, insurance guarantee mechanisms sponsored by official agencies have been in existence for years, primarily in the area of export credit and bilateral investment coverage. More recently, agreement was reached to proceed with the process to establish the Multilateral Investment Guarantee Agency (MIGA). The Study Group endorsed the concept of MIGA, and believed that it will constitute another important vehicle for the encouragement of investment in the LDCs. In general, the use of official insurance and guarantee schemes can be effective in supporting and encouraging private sector flows, and the size and structure of MIGA should enable it to have an important impact in this respect.

Observations on private sector alternatives

Having reviewed all of the alternative means of financing set forth above as well as other ideas and proposals not covered here,[1] the Study Group was encouraged that their further development and use promised substantial benefits in attempting to cope with the LDC debt problem in the longer term. Each of the mechanisms referred to offers the potential—in greater or lesser degree—for incremental financing sources for the LDCs to help meet their development needs. In some cases these mechanisms, in addition to providing larger funding sources, may also contribute to the development process and internal domestic growth as well. Examples include the encouragement of foreign portfolio investment, which is closely linked to the development of domestic capital markets in the LDCs, which in turn facilitates a more effective mobilisation of domestic savings for development purposes. Another example is the encouragement of foreign direct investment, which is closely linked to the development of the private sector in the LDCs, which is a crucial factor in the development process in general. To the extent that equity capital is involved, the timing of dividend payments is linked to the capacity to pay. Naturally, however, a continuing flow of equity finance will not be forthcoming unless there is the prospect of returns which are commensurate with the risk of the investment.

In the course of its work, the Study Group also reviewed the history of development finance and attempted to place the present LDC debt problem in an historical perspective. One of the conclusions reached was that the 1970s and 1980s have been an aberration in financial history in the sense that the primary channel for financing the development of the LDCs has been through the commercial banking system, in the form of syndicated medium-term floating rate general purposes loans. Never in history has the main thrust of development finance been through commercial bank lending, and there are special historical reasons for this recent development. The 1970s began with the termination of the gold standard, and then the emergence of a floating exchange rate regime, the complete restructuring of the Bretton Woods system, the oil price shocks, the recycling process, all accompanied by volatility in both exchange rates and interet rates. The financing needs of the LDCs could most easily be met through the commercial banking system which enjoyed a high degree of liquidity as a result of the recycling process. The large amounts required led to syndications; and the volatility in interest rates led to floating rate pricing. The demand for funds was clearly there and the supply of funds was available in the commercial banking system—and not, as discussed elsewhere, from official sources. At the same time, the borrowers had less interest in other sources of finance such as the bond markets, which were then primarily fixed rate and not of a size to meet the LDC demands, or foreign direct investment, which again had size limitations and which in many countries was actively discouraged by nationalistic policies.

In any event, the syndicated bank loan was by far the most important channel of development finance during that period, yet historically the financing of development overseas has always involved in a major way other private sector channels such as the bond market, the equity share market, project finance, and direct foreign investment. In modern times, official sources of finance have also been important.

The Study Group found this perspective to be encouraging in terms of longer run solutions to the present debt problem. The greater use of financial mechanisms other than commercial bank loans should not be considered extraordinary, but rather a natural return to a more normal pattern of development finance in historical terms. Little attention has been paid to these other financing mechanisms—whether they be traditional or innovative—because until recent years the need to do so was not there, and more recently because the immediate demands of the rescheduling process have consumed the attention of lenders and borrowers alike. For the longer term, the Study Group believed that these alternative private sector channels must be further developed and that the governments of both the LDCs and the developed countries should give an immediate priority to encouraging their further use and removing obstacles to their full utilization. Unlike the commercial banks, who have had an incentive because of their existing exposures to continue funding, and unlike official agencies who have policy mandates to assist in development finance, the private sector lenders and investors who are the alternative sources of funding have no compelling reason to participate in development finance other than the economic benefits they perceive in it. Accordingly, the inducements should be clear and strong.

Having observed that these alternative financing mechanisms must be given an immediate priority as part of a longer term solution to the debt problem, the Study Group could not conclude that they will provide near-term relief. Totalling the sums that may be available through each of them in the immediate future, even on the most optimistic basis, it is difficult to see how they, by themselves, can provide anything near the funding required given the diminution in commercial bank new money flows, and the level of financing of the LDCs necessary to maintain a reasonable rate of growth, quite apart from servicing their debt.

Official sources

For purposes of its study, the Group also reviewed official sources of finance. It did so with two objectives in mind: first, to study how the official institutions might utilize financing techniques that would be supportive of some of the private sector initiatives discussed above; and second, to review the role and function of the official institutions as residual sources of incremental funding not available elsewhere. In the light of the Study Group's conclusions with respect to private sector alternative financing mechanisms, and given the assumptions with regard to commercial bank funding, and taking into account the best estimates of the financing needs necessary to sustain a reasonable level of LDC growth, it became clear that it would be essential both to increase the level of official financing and to enhance its effectiveness.

In their historical perspective of development finance, the Study Group reviewed the role of official sources of finance over the years and, as indicated above, noted that the proportion of official funding to total development flows diminished significantly in the 1970s. At the beginning of that period, when the role of the Bretton Woods institutions was in question, and there was uncertainty as to how the recycling process would evolve, it was the commercial banks, rather than official agencies, which assumed the primary role in development finance. Before then, official sources, together with private sector channels other than commercial bank loans, provided by far the greater part of development finance. In the 1960s, for example, official sources accounted for approximately 80 percent of LDC funding, with the private sector accounting for about 20 percent. By 1980, private sources provided over 60 percent, with official sources dropping to 40 percent. Viewed against this historical background, any increase in official funding in the future may be seen to be a return to a more normal pattern rather than an extraordinary new policy course.

The Baker initiative recognized the crucial role of the official agencies. The initiative proposed mutual commitments by the various parties concerned to take actions that would serve to promote growth in the LDCs, as the optimal solution both for the debt problem and longer term development needs. The parties concerned included the commercial banks, which were requested to pledge new money over a three-year period; the governments of the LDCs, which were called on to adopt domestic policies designed to promote growth through the development of private sector initiatives, foreign investment, and other policies; the Bretton Woods institutions, and the World Bank in particular, which were called on to place greater emphasis on programs to promote structural growth and to accelerate disbursements under those programs; and lastly, the governments of the developed countries, which were called on both to support these programs and to provide the necessary resources to the World Bank and the other Bretton Woods institutions to enable them to carry out the programs.

No program can work without the support of the Bretton Woods institutions and member governments' implicit commitment to provide the resources necessary in the future. If any program for growth is to be successful, there will likely be a need for a capital increase for the World Bank to ensure that success. This increase would be required as the World Bank reaches the limit of its lending power as it extends major structural and sectoral adjustment loans to support the goals of the program. Since the bank is limited by its conservative one-to-one gearing ratio (loans may not exceed capital), it will be necessary to increase its capital to permit it to make more loans. The actual funding of the loans is in the market place; only a modest fraction of the increased capital need be paid-up and thus it need not require any significant expenditures on the part of the subscribing member countries.

In many ways, the involvement of the governments and the international institutions may have been the most important aspect of the Baker initiative. It provides the underpinning, for the future, of the programs called for in the plan. In the light of the probable financing needs of the LDCs over the next few years, the probable reduction in the levels of new money from the commercial banks, the practical limits on the amounts of new money that can be raised in a short time by means of all of the alternative sources of finance reviewed by the Study Group, it seems clear that a greater role for the official institutions will be essential. Without such a leadership role, the chances for a successful solution to the problem seem slight indeed at this point. With such a role, the chances for success are much improved; and if the prospects for success are perceived to be improving, the prospects for further developing the alternative sources of finance reviewed by the Study Group should also improve significantly. For the time being, however, they do not provide a near-term solution.

Footnote

[1] In addition to the work contributed by Study Group participants and the staff of their own organizations, the Study Group also benefited greatly from discussions with, and work done by, other groups and individuals on related subjects. Members of the Study Group were in continuing contact with these other groups and individuals, who were most generous in sharing ideas and research. The Study Group would like to acknowledge and thank in particular the following groups and individuals for their assistance and contributions in this connection. In many cases, the results of their research has been published, as noted in the listing below, and together constitute a significant core of reference materials on these subjects.

- Institute for International Economics: C. Fred Bergsten, Director; John Williamson, Senior Fellow; William R. Cline, Senior Fellow. Publications: "Financial Intermediation beyond the Debt Crisis," Donald R. Lessard and John Williamson, 1985; "Bank Lending to Developing Countries: The Policy Alternatives," C. Fred Bergsten, William R. Cline and John Williamson, 1985; "International Debt: Systemic Risk and Policy Response," William R. Cline, 1984.
- Overseas Development Council: Series on US-Third World Policy Perspectives. John W. Sewell, President: Richard E. Feinberg & Valeriana Kallab, editors of the series, including in particular "Investing in Development: New Roles for Private Capital?," Theodore Moran and contributors, 1986; and "Between two Worlds: The World Bank in the Coming Decade," Richard Feinberg and contributors, 1986.
- The Committee for Economic Development, Subcommittee on Finance and Third World Growth, of the Research and Policy Committee. Robert C. Holland, CED President; James W. McKee, Subcommittee Chairman, and Isaiah Frank, Project Director. Draft publication: "Finance and Third World Growth," (projected 1987).
- Council on Foreign Relations, Study Group on Capital Constraints on LDCs: Robert Callander, Chairman; Dorothy Sobol, Group Director.
- Chamber of Commerce of the United States, Task Force on International Economic Development of the International Policy Committee.
- The Bretton Woods Committee: James C. Orr, Executive Director.

Debt Swaps: A Technique in Developing Country Finance

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*The views expressed are the authors' and do not necessarily reflect those of the Federal Reserve Bank of New York, or the Federal Reserve System.

Overview

Debt swaps provide a useful technique to ease the financial problems of some less developed countries (LDCs). The potential size to which this market can grow is limited, however, and debt swaps can have adverse side effects that must be carefully monitored. This paper explores the strengths and weaknesses of this alternative approach to managing LDC debt.

Since the LDC financial crisis broke out in 1982, the debt swaps market has grown to reach an annual volume of perhaps $5 billion in 1986. Recent growth has been fueled mainly by new schemes allowing the conversion of debt into equity or local currency. These conversions underpin a secondary market where LDC loans trade at substantial discounts to face value.

Debt swaps can take various forms, and each has advantages and pitfalls. Debt-debt swaps between outside creditors provide banks and other creditors some flexibility in managing their exposures and can marginally ease the difficult rescheduling process if exposures are shifted to banks more willing to participate in new lending to LDCs. At the same time, however, these swaps provide no direct benefit to the country while they complicate the assignment of responsibility for new money.

Debt-equity swaps involving conversion into equity and debt-"peso" swaps that convert debt into local-currency liabilities can help if they attract additional foreign equity investment or bring about a return of flight capital. Given such "additionality", debt-equity and debt-peso conversions replace some debt requiring immediate hard-currency payments with liabilities that may be more favorably matched with the country's balance of payments needs. Swaps also tend to enhance privatization, perhaps reducing the burden of a large state-owned sector.

These advantages of debt conversion, however, must compensate for two major drawbacks. First, conversions rely on preferential exchange rates, which may distort trade and waste foreign exchange and, in the extreme, result in new capital flight. Second, they earmark proceeds of capital inflows to repay external debt rather than provide foreign exchange for other uses. Without additionality, these problems are likely to outweigh the advantages.

In sum, the present debt swaps market can provide a valuable margin of help in some situations, as long as the potential adverse effects are recognised and held to a minimum. The market's inherent limitations, however, imply that it is unlikely to reach sufficient size to replace the need for other financing sources. And, as the market grows, the negative side-effects may increase even more rapidly.

In the first section of this paper, we describe the various types of LDC debt swaps and the market in which the deals are made. In the second, we discuss the potential effects of the various swaps on LDCs and their banks.

1. The Nature of LDC Debt Swaps

1.1 Taxonomy

LDC loans include both sovereign and private-sector debt denominated and payable in a currency other than the country's own. Sovereign debt may be debt of the national government, the central bank, or a state-owned firm, or, in some cases, it may be private-sector debt assumed by the government because of a public guarantee. Most of the debt being swapped is sovereign debt subject to rescheduling and owed to banks.

Three basic types of debt swaps may be distinguished: debt-debt swaps, debt-equity swaps, and debt-peso swaps. Actual deals are complex and often combine the various types, with cash exchanged as well.

A debt-debt swap is a change of creditors holding LDC loans. Typically the parties assign loans or give sub-participations to each other without otherwise changing the terms of payment. The trade may be between only outside creditors: a U.S. bank swapping Argentine debt with a European bank for Chilean debt. Or it may involve an inside creditor: a Brazilian bank swapping its holdings of Mexican debt for Brazilian debt with a U.S. bank. Deals are structured to equalize face values, and cash is often used to compensate for differences in market values (e.g., $10 million in Country A debt for $8 million in Country B debt plus $2 million in cash).

A debt-equity swap is a deal converting an LDC's debt into foreign equity in a domestic firm. As such, the swap serves as a vehicle for foreign direct or portfolio investment. While the equity itself is denominated in the local currency, the terms of conversion may allow the investor future access to official foreign exchange for dividend remittances and capital repatriation, though perhaps with tighter restrictions than the usual ones for foreign investment. The equity position may be held directly by the original holder of the debt or by a foreign multinational. Soon, foreign institutions may begin to hold positions indirectly, through closed-end funds. Multinationals normally pay cash for the debt. For them, a typical debt-equity swap often involves several debt-debt swaps to assemble enough paper for conversion into equity.

When conversion of LDC debt involves a resident of the country instead of a foreign investor, we term the deal a debt-peso swap, where by "peso" we simply mean local currency. Hence, debt-peso swaps are designed for the repatriation of flight capital. Residents buy their own country's debt in the secondary market using their funds abroad or foreign currency acquired in the parallel market. They then present the paper to the central bank or the original borrower for redemption. Assets are redenominated into the local currency, as in a debt-equity swap, but the proceeds do not always have to be invested directly in a firm.

1.2 Market structure and prices

The market for the three types of swaps has been growing rapidly but remains small in relation to the amount of LDC debt outstanding. Estimates of market size vary widely, and the chain of transactions required to complete a typical swap makes double counting likely. Based on our own estimates and on interviews with market participants, perhaps $12 billion in swaps has been accomplished since 1982, counting only net shifts in portfolios. In 1986, perhaps $5 billion in swaps took place, after netting out debt-debt swaps ultimately linked to debt conversion. Some estimates for 1986 go as high as $8 billion, but we suspect this figure includes substantial double counting. By comparison, the bank debt of the 15 LDCs listed in the Baker Initiative totals roughly $300 billion.

Before 1985, probably three of four swaps were debt-debt swaps that did not end in a debt conversion. But this pattern is changing dramatically, as countries like Chile, Mexico, and the Philippines set up programs that make debt-equity swaps attractive to investors. In addition, Chile has a debt-peso program that has converted even more debt than the country's debt-equity program. Since 1982, about $5 billion of LDC foreign-currency debt has been replaced through debt-equity and debt-peso swaps. Debt-debt swaps are increasingly becoming just links in a chain of transactions leading to debt-equity and debt-peso swaps. Cash sales of LDC loans are also required for debt-equity swaps where the investor is not the original creditor and for debt-peso swaps. But the volume of cash sales would still likely be much less than a quarter of the gross total of swaps.

The supply of debt for the three types of swaps tends to come mainly from European banks and regional U.S. banks, though at least one large Japanese bank and some Latin American banks have also supplied paper.[1] Among the major money-center U.S. banks, for a time only one was known to be swapping large amounts of loans from its own portfolio. Another bank is reported to have sold $125 million of its exposures in the smaller debtor countries. The recent increase in loan loss reserves by some banks will likely add to the debt swaps market but the magnitude of the impact on the market is impossible to predict.[2]

Four or five major American money-center banks participate prominently as intermediaries, along with investment banks in New York and merchant banks in London. A number of investment boutiques have been active intermediaries, but they have been losing market share. Bid-offer spreads together with intermediation fees are 1 to 2 percent for typical deals of $2 million to $5 million involving debt that is regularly traded, but may range as high as 4 percent for smaller deals or in paper not so frequently traded.

The spreads are steep and vary widely due to transactions costs. Deals are intricate, require much customized documentation, and involve many counterparties. One participant described a typical deal as involving ten banks and debt of a dozen countries. The loans that are now easiest to trade are reportedly those of Chile and Mexico, accounting for perhaps two-thirds of the market. Before February 1987, Brazilian paper was also fairly heavily traded in debt-debt swaps.[3] Other loans in which there has been significant activity include those to Argentina, Ecuador, Ivory Coast, Morocco, Philippines, Poland, Romania, Venezuela, and Yugoslavia. A typical deal takes two months to complete but some deals might require three months. Some intermediaries report that they are beginning to keep small inventories of LDC debt to facilitate deals.

Some intermediaries also provide price lists for cash sales of various LDC loans, as well as barter ratios for debt-debt swaps. The lists show deep discounts to face value for most debt of rescheduling countries as well as price volatility for some countries (see Table 1). During 1986, for example, the discount on Mexican public-sector debt widened from less than 30 percent of face value to over 40 percent, while Philippine debt traded up by over 10 points during the last quarter of the year. The discounts may not always be driven by fundamental prospects for loan repayment; they seem to be affected also by the degree of disagreement among banks or between debtors and creditors over specific rescheduling programs.[4] One consistent pattern has been a substantial

Table 1

Indicative Bid-Offer Prices for LDC Loans[a]

(Cents on the Dollar)

Country	Jul 85	Jan 86	Jul 86	Sep 86	Dec 86	May 87
Argentina	60-65	62-66	63-67	65-67	65-67	58-60
Brazil	75-81	75-81	73-76	74-76	75-76	61-63
Chile	65-69	65-69	64-67	66-69	67-69	67-70
Ecuador	65-70	68-71	63-66	62-66	65-66	50-54
Mexico	80-82	69-73	56-59	58-62	56-57	57-60
Nigeria	N.A.	N.A.	N.A.	55-60	36-42	37-40
Peru	45-50	25-30	18-23	20-24	18-20	14-16
Philippines	N.A.	48-52[b]	N.A.	57-62	72-75	68-72
Poland	55-60	50-53	42-45	50-53	42-44	45-47
Venezuela	81-83	80-82	75-78	75-77	74-75	72-74

Source: As published in International Financing Review, *various issues.*

[a] *Not firm quotes; sometimes no transactions take place at these rates.*

[b] *Feb 86.*

narrowing of bid-offer spreads since 1985, evidence perhaps of increasing liquidity in the market.

For the most part, however, these circulated prices and ratios remain either historical or merely indicative. Very rarely are they firm quotes. One intermediary said it might be ready to stand on its quotes but only for the few actively-traded LDC loans in the market.

1.3 Debt-debt swaps

The onset of the debt crisis in 1982 changed the whole constellation of perceived risk-return characteristics and administrative burdens of bank exposures to LDCs. Banks have therefore moved to realign their portfolios. Much of the activity in debt-debt swaps reflects this realignment, of which the main objectives appear to be consolidation, liquidity, and tax reduction.

In most debt-debt swaps, the result appears to be a greater concentration of country exposure in bank portfolios rather than greater diversification. Banks have been swapping LDC loans in an effort to consolidate their exposures into a few countries where they have long-term strategic interests or to get out of countries presenting little prospect of future improvement. All banks, of course, do not end up with the same few countries. Individual banks assess different risks for countries and often have different long-term investment interests in countries. Hence, LDC debt tends to be traded to concentrate a bank's exposure in those countries where it perceives a comparative advantage.

A number of debt-debt swaps have taken place purely for tax reasons. For example, a Dutch bank operating in New York swapped its Mexican public-sector debt carrying tax receipts for Mexican public-sector debt not carrying tax receipts. The tax receipts meant that withholding taxes on the debt's interest earnings had been paid in Mexico, and the receipts could then be used to offset tax liabilities elsewhere. The bank apparently could not fully use the receipts because taxes it owed in New York were low.

In swaps involving an inside creditor, liquidity is often a motive. Specifically, the debt crisis prompted withdrawal of foreign deposits from many LDC banks, leaving the banks with liquidity problems. For example, in 1983, a Brazilian bank swapped its holdings of largely Mexican paper for an equal face-value amount of cash and largely Brazilian paper held by a New York bank.[5] Not only did the deal provide liquidity but it also gave the Brazilian bank an asset structure that more closely matched its liabilities. The loss of foreign deposits meant that a larger share of the bank's liabilities was now made up of Brazilian deposits, and the swap increased the bank's holdings of Brazilian debt on which it could presumably collect in cruzados if not in dollars. Note that only the cash part of the swap provided the bank any means to repay dollar liabilities. Moreover, debt swaps with an inside creditor reduce potential sources for future new money since the inside creditor is unlikely to have foreign exchange to contribute to a new-money deal.

1.4 Debt-equity swaps

The impetus for debt-equity swaps has been the willingness of some LDCs to buy back their debt using local currency, provided the proceeds are invested in the country. At the moment, three countries have active programs allowing conversion of debt into equity: Chile, Mexico, and the Philippines. As of April 1987, these three countries together had authorized conversion of about $1.4 billion of their debt into foreign equity (see Table 2). As part of its April 1987 rescheduling arrangement, Argentina agreed on a debt-equity program that would initially allow $300 million a year in debt conversions. In a previous program that lasted six months in 1985, the country had already converted about $500 million. Brazil is estimated to have converted over $2 billion of debt in 1982-84, but new restrictions in late 1984 slowed conversions. Nigeria and Ecuador are thinking of setting up new programs, while Costa Rica and Jamaica have announced their programs.

Table 2

Debt-Equity Conversions

(Millions of U.S. Dollars in Face Value, April 1987)

Country	Total Authorized[a]	Period of Program
Argentina	500	Feb. to Aug. 1985
Brazil	2,300	Since 1982[b]
Chile	420[c]	Since June 1985
Mexico	950	Since May 1986
Philippines	60	Since April 1986[d]

[a] *Note that authorized conversions may differ from amounts of debt actually cancelled. In Mexico, for example, of $953 million authorized as of April 1987, $722 million in face value of debt had been cancelled.*

[b] *Since November 1984, only direct swaps by original creditors may be registered for purposes of future capital repatriation or dividend remittances.*

[c] *Chapter 19 only. In addition, about $780 million more has been retired through debt-peso swaps (Chapter 18).*

[d] *Program formally launched only in August 1986, but the figure includes swaps accomplished between April and August.*

Multinational interest in these schemes stems from the fact that LDC debt has been available in a secondary market at discounts to face value that far exceed redemption discounts. For example, in late 1986, Mexican public-sector debt was selling at 57 cents on the dollar. To convert the debt into pesos, Mexico's Hacienda was taking an average redemption discount of 11 percent. If fees to the intermediary were 2 percent, a multinational could get 53 percent more pesos (100 minus 11 minus 2, divided by 57) through a swap than by purchasing pesos at the official exchange rate. In effect, the foreign investor is able to purchase pesos at a subsidized rate in order to make certain authorized investments. This is a form of preferential exchange rate, although this term is seldom used in connection with these transactions. Similarly, swapping Chilean debt, which could sometimes be redeemed at face value, could get the foreign investor up to 40 percent more domestic currency. Swapping Philippine debt, which could be redeemed with the central bank at a 5 percent discount for selected investments, could yield 24 percent more domestic currency.

Sometimes the original creditor undertakes the investment directly, bypassing the secondary market and thereby perhaps preserving book values for its assets. The creditor may benefit by giving up an asset with downside risk and no potential for capital gain and getting an asset still with downside risk but with some potential for large gain. In January 1986, Bankers Trust swapped $60 million in loans to Chile for about half of the Provida Pension Fund and 97 percent of a life insurance company associated with Provida. In March 1987, American Express arranged to swap $100 million in loans to Mexico for an equity stake in a project to build luxury hotels in four Mexican cities.[6]

A twist to debt-equity swaps is the setting up of closed-end funds to which subscribers contribute LDC paper. The fund manager negotiates the terms of conversion with the LDC government and builds up an equity portfolio. For the Philippines, Shearson Lehman Bros. is putting together the First Philippine Capital Fund, with perhaps four-fifths of a planned $250 million issue coming from debt contributions. The Overseas Private Insurance Corporation (OPIC) has agreed to insure it against political and transfer risk. The International Finance Corporation (IFC) is exploring the creation of similar but even more ambitious funds for the Philippines, Mexico, and other countries, perhaps with political and transfer risk insurance from the Multilateral Investment Guarantee Agency (MIGA).

1.5 Debt-peso swaps

Apart from attracting foreign equity investment, the Chileans and Filipinos are also trying to lure back flight capital. Hence, their debt-peso programs provide de facto amnesty for nationals who have taken funds out of the country and are willing to bring the money back. No questions are asked about untaxed income assets may have earned abroad or the means by which the nationals got the money out of the country. Mexico also may be considering debt-peso swaps.

In the Chilean case, the proceeds of conversion do not have to be invested directly in a firm, and residents can choose to be paid in various ways, typically in the form of long-term debt indexed to the country's price level. This debt-peso program, known as "Chapter 18," has been more popular than the debt-equity program known as "Chapter 19." Perhaps 65 percent of about $1 billion in Chilean debt redeemed between June 1985 and December 1986 came under Chapter 18. In the Philippines, residents can avail themselves of the same debt conversion program open to foreign investors.

In principle, the new assets created by a debt-peso swap would require future servicing only in local currency, assuming the income from the external assets that are swapped into pesos had not been available to finance directly or indirectly the country's external liabilities.

If the assets were generated by flight capital, this seems a plausible assumption, but it is difficult to assert with certainty that flight capital is the only source for these funds. By contrast, a debt-equity swap creates an obligation that eventually will be serviced in foreign currency, although the timing of these payments may be more advantageous than for the underlying debt.

1.6 Portfolio contamination

One important reason U.S. regional banks swap or sell more loans from their own portfolios than U.S. money-center banks stems from book-value considerations.[7] These considerations are more likely to matter for public-sector debt than for private-sector debt.

A May 1985 opinion notice of the American Institute of Certified Public Accountants (AICPA) said swaps are to be accounted for at "current fair value" and that the "estimated fair value of the consideration received will generally be less than the recorded investment in the consideration paid," in which case "a loss should be recognised."[8] The release noted that valuation for noncash swaps is "highly judgmental" and that two banks could reach different conclusions on the same swap. In essence, booking a loss is inescapable in the case of a cash sale at a discount, but the notice leaves banks some leeway on how to treat a swap of equal face-value amounts. Hence, many banks will not sell for cash but will agree to a debt-debt swap if the deal is structured to equalize face values.

The threat of swaps contaminating the rest of the loans to the same borrower divides banks with small exposures from those with large exposures to the same borrower. The AICPA notice added that whether or not there was a swap, "in the course of preparing financial statements, a bank must review the loan portfolio in order to assess the adequacy of the allowance for loan losses." This admonition was reinforced by a circular from the Comptroller of the Currency dated May 22, 1985: "If a loss from a swap transaction is attributable to a major concern as to collectibility, then there should generally be a presumption that a reserve for losses on other loans to that debtor is warranted."

Some banks appear to behave as if swaps would subject the rest of their loans to the same borrower to review. In practice, even if a swap transaction led to a write-down of loans remaining on a bank's books, it would not necessarily affect all the loans to the country. With purely private-sector debt, one obligor is treated as a separate borrower from another obligor in the same country, and swapping the debt of one would not affect the debt of the other. With public-sector debt, the distinction is less clear. It is not always obvious whether the loans to one parastatal should be treated separately from loans to the central government or to another parastatal. Hence, the risk of contamination is more of an issue with public-sector debt than with private-sector debt.

Since their exposures to the public sector in major debtor LDCs are large relative to the size of the debt swaps market, money-center banks are unable to dispose entirely of their exposures. But swapping a fraction of their public-sector exposure to a country and writing down or reserving against the remainder might have a major effect on their books. Regional banks can avoid the contamination problem by selling "all or nothing." But since this option is not open to money-center banks, they have been reluctant so far to swap debt from their own portfolios even at equal face-value amounts.

Given the exposure and type of debt, the likelihood of portfolio contamination is greatest in the case of a cash sale at a discount, since there is then no ambiguity on reporting the transaction. A regional bank, for example, reported that in late 1986 it sold LDC loans at a $2 million loss and took a write-down of $39 million in anticipation of later sales of other loans.[9]

Write-downs of exposures to LDC debtors would have a larger impact on U.S. money-center banks than on smaller banks. While the aggregate capital position of these major banks has been improving dramatically, their total LDC exposure as a proportion of their capital still exceeds that of small banks. According to the "Country Exposure Lending Survey" of the Federal Financial Institutions Examination Council, all U.S. bank claims on non-OPEC developing countries fell from 149 percent of capital in June 1982 to 88 percent in December 1986. In contrast, for the nine major money-center banks, LDC exposure declined from 223 percent of capital in June 1982 to 141 percent in December 1986.

2. LDC Adjustment and Financing

2.1 Defining the issue

Dealing with LDC debt—While there have been various proposals on how to deal with the LDC debt crisis and while the actual approach taken has evolved over time, any viable approach must contain two elements: sound adjustment and structural reform by rescheduling countries; and continued financing from creditors, including governments, multilateral institutions, and commercial banks.[10] The first is necessary to restore growth and rebuild the LDCs' capacity to service external debt. The second is necessary because orderly adjustment generally requires some amount of financing to maintain trade and to fill the gap between domestic saving and the investment needed for long-term growth. LDC debt swaps can ease this adjustment and financing process, within limits and under certain circumstances.

Sound adjustment—Debt-equity and debt-peso swaps have been criticized as interfering with sound adjustment by LDCs by causing loss of control over the money supply or the exchange rate. More importantly, however, as we explain later, swaps could serve to misallocate resources, including scarce foreign exchange. On the positive side, debt-equity and debt-peso swaps could help by converting an LDC's foreign debt into obligations with payments that the economy might be better able to handle. Moreover, they could encourage privatization of firms that would otherwise be burdensome to the economy.

Bank financing—Continued external financing from commercial banks could be hampered by swaps. Debt-equity and debt-peso swaps could reduce the potential sources for future new money, while debt-debt swaps could complicate the assignment of responsibility for new money. However, debt-debt swaps could help if they shift exposures to creditors more willing to take part in rescheduling exercises for particular countries. Also, cash sales generated by debt-equity and debt-peso swaps could give some of the unhappiest creditors a way out, adding some needed flexibility to the rescheduling process.

The issue—On balance, it is not immediately clear whether a growing market for LDC debt swaps will help or hinder the rescheduling process. Some of the problems mentioned above can be avoided. If handled carefully, debt-debt swaps need not interfere seriously with raising new money, nor need debt-equity and debt-peso swaps cause loss of control of the money supply. But other problems are fundamental to debt-equity and debt-peso swaps. These swaps shrink bank exposures over time and thus could eventually hinder the raising of new money. Moreover, the swaps rely on the existence of a preferential exchange rate, which may waste resources or entail self-defeating controls to protect official exchange reserves. They also serve exclusively to repay external debt rather than provide foreign exchange for other possible important uses. The issue is, therefore, whether the problems are outweighed by the benefits.

The key factor—The answer turns largely on the degree of what we term "additionality," that is, the ability of debt-equity swaps to attract foreign equity investment that would not otherwise come in, or the ability of debt-peso swaps to attract flight capital that would not otherwise come back. Without additionality, the benefit of substituting foreign equity or domestic debt for external debt is slight at best, since the country could achieve most of the same ends by earmarking foreign exchange to pay off some creditors. Swaps may still provide some flexibility to banks or serve as a signal of the country's willingness to accept foreign investment and privatization, but additionality brings with it decisive advantages.

2.2 Additionality

The advantages of debt-equity and debt-peso swaps depend on the degree of additionality. Suppose a foreign multinational has already decided to invest a specific sum directly in an LDC. If the LDC government then introduced a conversion scheme allowing that amount of investment to take place through a debt-equity swap, there would be no additionality. By contrast, suppose instead that the multinational previously had no intention to invest, but the chance to invest through a swap changed that decision. Then the firm's investment in the country would embody additionality.

In practice, it is hard to tell the difference. For example, about half of the approved Mexican conversions in 1986 were swaps by five multinational automobile manufacturers. These investments had been planned as early as 1982, four years before Mexico had a debt conversion program. It would seem that there was no additionality in this case. But the issue is whether and when Chrysler or Volkswagen, two firms which have made the largest investments in Mexico through debt-equity swaps, would have gone ahead with their plans if not for the enhanced terms offered.

An illustration—Net foreign direct investment in Mexico averaged roughly $500 million a year in 1983-85 and total external debt at end-1986 was about $100 billion. Suppose that in the absence of debt-equity swaps the country requires $6 billion in new money from banks. To provide an extreme example, suppose Mexico introduces a debt-equity program, but additionality is zero. Table 3 shows the effects. Foreign investors still put up $500 million. Since this investment takes place through debt-equity swaps, Mexico has $500 million less in foreign exchange flows into the central bank than otherwise, causing the new money requirement to rise (or foreign exchange reserves to drop) by $500 million. Assuming the discount on Mexico's debt in the secondary market is a third of face value, the swaps retire $750 million in external debt. But because of the rise in new money, the net effect on debt is a drop of only $250 million. Mexico's net debt increases $5.75 billion instead of $6 billion.

Table 3

Hypothetical Impact of Debt-Equity Swaps

(millions of U.S. dollars)

	No Debt-Equity Conversion	**With Debt-Equity Conversion**	
		No Additionality	**With Additionality**
(1) Foreign investment	500	500	1,000
(2) New money need	6,000	6,500	6,500
(3) Debt retired through swaps (at 33.3% discount)	—	750	1,500
(4) Net debt retired (after increase in new money)	—	250	1,000
(5) Net new debt: (2)—(3)	6,000	5,750	5,000
(6) New foreign equity (at 10% redemption fee)	500	675	1,350
(7) Total new foreign liability: (5)+(6)	6,500	6,425	6,350
(8) Ratio of new equity to total new liability (6)/(7)	7.7%	10.5%	21.2%

While the investors' outlay is $500 million, for purposes of future capital repatriation and profit remittances their investment is registered at the redemption value of the debt. If the redemption discount is 10 percent, new registered foreign equity in Mexico is $675 million. The redemption fees save Mexico $75 million, since net liabilities to foreigners (debt and equity) rise less than without swaps. The liabilities also seem to have a better mix. More than 10 percent of new liabilities is in the form of equity, compared with about 8 percent otherwise. These benefits, however, appear slight when we consider the amount of outstanding debt and the country's need for a larger sum of new money. If creditors refuse to provide the additional new money, any benefit from lower interest payments will almost certainly be outweighed by the loss of potential foreign exchange. If investment would come in anyway, in the absence of debt conversion the investment would provide foreign exchange for the country to use as it chooses. It can then choose to repay debt or use the foreign exchange for other purposes.

With additionality—Suppose instead that additionality is such that the debt-equity program causes foreign investors to double their investment to $1 billion but that Mexico is not able to restrict access to the program to only the "truly additional" $500 million. The new money need rises to $6.5 billion, as in the case without additionality. But the swaps retire $1.5 billion in debt, so that net retirement is $1 billion and net debt rises $5 billion. The reduction in debt burden remains slight but it is four times greater than before. Redemption fees save the country $150 million in terms of a smaller increase in foreign liabilities, twice the savings without additionality. Equity makes up 21 percent of new liabilities, twice the proportion without additionality. The benefits appear more substantial and more likely to outweigh the difficulty of having to request a larger sum of new money.

Additionality would have a similar effect with debt-peso swaps, except that the new liabilities would be in the form of debt requiring servicing in local currency rather than equity that ultimately requires servicing in foreign currency. If foreign exchange turned out to be a critical constraint in the future, the liability mix resulting from a debt-peso swap might be less burdensome to service than that resulting from a debt-equity swap of the same size.

Direct swaps into equity or debt contributions into a closed-end fund by the original creditors seem to hold the most potential for bringing about additionality. Since most creditors did not intend to invest directly when they first made loans to LDCs, these swaps give them an equity position they would otherwise not hold. The local currency value of the equity position, and thus the effective exchange rate for the conversion, could depend more on direct negotiation with the host government than on prices in the secondary market. The government can in principle set what it considers an appropriate effective exchange rate. Closed-end funds, however, are limited by the size of the local capital market and the value of parastatals and other assets that the government may privatize or sell.

Need for supporting policies—Investment over the long term depends primarily on the expected profitability of business opportunities, which in turn depends on the economic climate, extent of capital controls, and other regulatory hurdles. Better investment policies are desirable not only for their own sake but also as a means to reinforce whatever additionality debt-equity and debt-peso swaps might have. The opportunity of an investor to take advantage of the discounts in the secondary market can induce some additionality, but even more can be induced if the country moves towards more liberal investment policies.

Direct purchases and redemption fees—Assuming the country were able to obtain the larger sum of new money required, it would seem to benefit from debt conversion, because the redemption fee would reduce the amount by which its total new liabilities would rise and because somewhat less of these liabilities would be in the form of debt requiring fixed payments in foreign currency. In the absence of additionality, however, the country hypothetically could do even better if it instead came to the secondary market directly to buy up its own debt. While direct debt purchases result in unequal treatment of creditors through selective repayment and violate specific covenants in syndicated loan agreements, it is hard to prevent some LDC governments that have particularly poor relationships with their creditors from nonetheless making limited purchases through their own financial institutions and other parastatals.[11]

By purchasing the debt directly rather than indirectly through debt conversions, the country could take the full market discount for itself instead of the redemption fee only, and in the process avoid problems a preferential exchange rate may cause. In our example, the country could buy back $750 million in debt with the proceeds of the $500 million in foreign investment that would have come in anyway. After new money, net new debt would be $5.75 billion, the same as in the case of no additionality. But now new foreign equity claims would be only $500 million instead of $675 million, and total new foreign liabilities would be $6.25 billion or $175 million less than in the case of no additionality. It is true that this example is not entirely realistic since creditors would be unwilling to provide any new money at all while the country is using part of the proceeds to buy back its own debt. Nevertheless, the example does demonstrate that the country would make the most out of a debt conversion program in the absence of additionality by charging a redemption fee as close as possible to the market discount.[12]

With sufficient additionality, a debt conversion program can produce positive results that could not be matched by direct purchases. In our example with additionality, total new liabilities would be $6.35 billion or $100 million more than if the country allowed no debt conversion but used $500 million in foreign exchange reserves to buy back its own debt in the market. However, net new debt would be $5 billion or $750 million less than if the country bought back its own debt. If the country charged a high redemption fee, less foreign investment would flow in, since additionality implies that this flow is sensitive to the effective exchange rate. A higher redemption fee would mean lower total new liabilities than otherwise but more of these liabilities would be in the form of debt rather than equity.

A moral hazard—One problem with the country itself coming to the secondary market to buy back its debt is the resulting moral hazard. In the extreme, the country would have a perverse incentive to pursue poor policy or take unilateral action on its debt to depress the market price and buy it back at a low price. In most circumstances this risk would be small, since such actions would worsen the country's relationships with its creditors while providing little benefit to the country. But if creditor relationships deteriorated markedly for other reasons, the temptation could grow. Debt-equity and debt-peso conversions, however, avoid this moral hazard. Foreign investors receive most of the gain from discounts. Even if the country charges a high redemption fee, moral hazard will not be severe, since the policies that would lower the market price of debt would also create economic conditions that would discourage foreign investment or the return of resident capital even at the depressed market price.

2.3 When debt conversions help

One main advantage of debt-equity swaps with additionality is that they replace a debt liability that requires immediate service with an equity liability (albeit of somewhat greater amount) that presumably will better fit the country's ability to pay. The host country's balance of payments may benefit from postponed payments in hard currency.

Some programs explicitly restrict profit remittances and capital repatriation on investments through debt-equity swaps so that they do not exceed the payments the underlying debt would have required for the first several years.[13] Eventually, however, investors expect to remit earnings. These earnings tend to rise when the economy is strong and to fall when it weakens. If exports rise in line with the economic upturn, the balance of payments is likely to accommodate the dividend outflows with little difficulty. Set against this, however, is the possibility that as the economy turns down or as the balance of payments deteriorates, investors might attempt to liquidate their positions.

Similarly, for debt-peso swaps with additionality, a debt liability that requires service in foreign currency is replaced with a liability that requires service only in local currency.

A second important advantage of debt conversions is that additional investment may go to the acquisition of firms held by the government. Such firms often suffer from poor management and depend on state subsidies. Privatization through debt-equity or debt-peso swaps may put more effective management in place and in any case would relieve the government of the fiscal burden.

Even without additionality, the discounts inherent in debt-equity swaps may advance the timing of foreign investment. Investment planned for the future may be brought forward to take advantage of what may be perceived as temporarily favorable terms for purchasing domestic assets. As a result, the balance of payments may enjoy a respite because of slightly lower service payments, offset by lower capital inflows in the future. Even without additionality, however, there may be some advantage if privatization occurs sooner rather than later. The government may save on subsidies to money-losing firms and the economy as a whole may benefit from improved management.

2.4 Misallocation of resources

The advantages offered by debt conversion should be weighed against the problems it may cause, in particular a possible misallocation of resources. Debt-equity and debt-peso swaps may misallocate resources in two ways: (a) by relying on preferential exchange rates, which may send the wrong signals for investment; and (b) by earmarking the proceeds of foreign equity investment or returning flight capital for the retirement of external debt, thereby excluding other possible important uses. In other words, is it appropriate to use the exchange rate to subsidize certain capital inflows? And is it appropriate to employ the foreign exchange so gained to retire debt?

Foreign investors, and perhaps domestic investors from whom equity is purchased, gain from debt-equity swaps and nationals from debt-peso swaps because of the discounts in the secondary market. In choosing who may gain from the discounts, the government is in effect granting a subsidized preferential exchange rate. Like other types of price distortions, a preferential exchange rate is advisable only in certain limited circumstances. A preferential rate for certain capital inflows ultimately penalizes exports, import substitutes, and other sectors that earn or save foreign exchange. Consequently, resources that otherwise would be invested in the economy's traded goods sector go elsewhere. The fact that investment comes into the economy because it is made profitable by a debt-equity or debt-peso swap does not necessarily mean the investment is good for the country. The investment may go into protected sectors and worsen production distortions, or the rate of return on investments by foreigners, net of the preferential exchange rate, may exceed that received by domestic investors in competing activities. Moreover, as we explain below, a preferential rate encourages "round-tripping," which could deplete official exchange reserves.

The ideal way to attract the desired capital flows would be to remove other price distortions or artificial barriers, perhaps by means of currency devaluation, interest rate deregulation, and a relaxation of capital controls. Policy authorities may have reasons, however, for not choosing the "first-best" measures of letting prices adjust to competitive levels and removing various controls. The preferential exchange rate in debt-equity and debt-peso swaps may be used to compensate for existing distortions. The government may also decide the subsidy is worthwhile as a visible signal of the country's eagerness to attract foreign direct investment. This "second-best" approach seems to be a conscious policy in both Mexico and the Philippines, where the redemption discounts for debt-equity swaps depend on the specific purpose of the investment.

Debt-equity and debt-peso swaps may further misallocate resources by earmarking the foreign-exchange proceeds of capital inflows for the retirement of external debt. In some situations, there may be better uses for foreign exchange, e.g., to pay for imports. If the best use of foreign exchange for a country were in fact to repay some of its debt, then the earmarking would not be a problem. It is a problem, however, when a rescheduling country asks for a sizeable amount of new money through concerted lending. An apparent inconsistency arises: the country can afford to repay part of its debt through a swap, but still needs to stretch out debt repayments and ask for new money. In fact, as we have noted, swaps tend to increase the amount of new money required.

The inconsistency can be qualified, however. Debt tends to be rescheduled in large tranches or categories. A country may not be able to repay a whole tranche, but to repay a little debt may help to buy off a few troublesome creditors with small exposures. The swaps in effect allow certain types of selective repayment that rescheduling agreements do not handle very well. Hence, allowing swaps in small amounts while trying to reschedule is not always inconsistent. Still, large-scale conversions seem hard to justify when there is at the same time a large request for new money.

2.5 Round-tripping

Debt-equity and debt-peso programs require the maintenance of more than one exchange rate. This opens an opportunity for arbitrage, which, left unchecked, could deplete official exchange reserves.

Firms and individuals earning foreign exchange would be loath to surrender hard currency to the government at the official exchange rate. Thus they have an incentive to under-invoice exports or not declare service receipts. Similarly, importers would over-invoice to obtain more foreign exchange from the government than they need. Having engineered capital flight through under-invoicing and over-invoicing, exporters and importers could then bring the capital back into the country at the more favorable exchange rate offered by debt-peso swaps. This "round-tripping" uses up official exchange reserves. The government loses reserves with capital flight but gains no reserves on the return trip, since returning capital is used to retire external debt.

Chile has an auction system that mitigates but does not eliminate the incentive for round-tripping. The system does shift arbitrage pressure from the foreign exchange market to the market for cupos. So long as a preferential exchange rate is maintained for debt-peso swaps, a tendency for round-tripping seems unavoidable.

Debt-equity swaps are also a potential vehicle for round-tripping. Foreign firms that would otherwise retain earnings in the country are instead encouraged to take funds out and bring them back through swaps, taking advantage of the preferential rate. Even if the firms invest in new activities or plants, it is still possible that they have hastened profit and capital repatriations to exploit the preferential rate. These swaps again carry no additionality while they deplete foreign exchange through debt redemptions.

To protect official exchange reserves from round-tripping, the government may tighten exchange and capital controls. Unfortunately, as the previous discussion suggests, these controls can weaken additionality and add to existing distortions in the economy.

2.6 Controlling money supply

There has been concern that if debt-equity and debt-peso swaps grow large enough and additionality is substantial, swaps can cause loss of control of the money supply. In Chile, for example, debt-peso swaps have been so popular that authorities have worried about the amount of cash the swaps inject into the system. This injection would take place with any foreign equity investment or return of flight capital, whether or not the inflow comes through a swap. The swap will only affect the money supply to the extent that it increases capital inflows.

There is no such injection if the peso proceeds come entirely from the original obligor. Also, redemptions in domestic debt are automatically sterilized. However, if the original obligor is bankrupt or the government is the obligor, the central bank may ultimately provide the money. Moreover, in many LDCs the scope for sterilization is limited by a shallow market for domestic government debt or by fiscal constraints on servicing that debt, particularly when domestic interest rates exceed the foreign rate. The problem is the usual one of how to sterilize in the face of large capital inflows.

The Chilean authorities seem to have found a way to manage this problem. The Chileans limit debt-peso redemptions in a given month to the amount that can be effectively sterilized. Rights to conversion, called "cupos," are auctioned off to domestic banks, which then distribute them to customers. The cupos have commanded as much as 16 percent of the peso price of the investment. The terms of redemption are negotiated with the original obligors who are thus also able to get a share of the discounts available in the secondary market. The government itself and other state entities are major obligors. The resident undertaking the swap typically ends up with a discount of about 5 percent.

The cupos now allow debt-peso swaps of about $60 million a month, or roughly 10 percent of the monetary base each month. This seemingly high rate of conversion has evidently not exceeded the economy's scope for sterilization. In the first year the swaps were allowed (June 1985-June 1986), annual consumer price inflation in Chile fell from about 33 percent to 20 percent. While other countries may not have as wide a scope for sterilization, countries like Mexico and the Philippines seem to have a long way to go before their conversion programs grow to the same relative magnitude as Chile's. The annual volume of conversions in Chile for debt-equity and debt-peso swaps together has been running at twice the size of the country's monetary base. In contrast, the total amount of conversions in Mexico has been about 10 percent of the monetary base, and in the Philippines, under 3 percent.

2.7 Raising new money

The issue of new money for LDCs is complicated by a free-rider problem that arises irrespective of the existence of a debt swaps market. New money is provided to enhance prospects for servicing existing loans. A bank which fails to participate in new money programs, however, will still share in the benefits. It will receive interest payments and remain eligible for principal repayments. Hence, individual banks have an incentive to resist new lending—in effect, an incentive to become "free riders." The rescheduling process followed since 1982 requires that banks lend in concert to minimize this problem. Since the free-rider problem already makes raising new money difficult, it is important that swaps do not exacerbate the problem. So far, rescheduling agreements have dealt with a changing base for new money by anchoring the base to exposures as of some early date, usually the time the debtor country first declared a standstill on repayments of existing debt.

Debt-debt swaps complicate the process for raising new money. For example, to obtain new money pledges for Mexico's latest rescheduling agreement, banks in the steering committee first approached those who held debts as of August 1982. If debt had been swapped, the committee still looked to the original creditors unless the new holders had agreed to accept any obligation to provide new money.

The tendency of debt-debt swaps to concentrate exposures in a smaller and more homogeneous group of creditors may not be entirely undesirable if the swaps shift exposures to banks more willing to take part in the rescheduling process. Ideally, debt-debt swaps should explicitly reassign new money responsibility to the new debt holders, since they would have the incentive to cooperate. There are practical obstacles to such a reassignment, however, especially if the new creditor is not a bank.

In the case of debt-equity and debt-peso swaps, the swaps reduce the stake of creditors shedding their exposures while the new asset holders have no obligation and little incentive to contribute to new money programs. Decisions for concerted new lending become increasingly hard to enforce on the entire pool of creditors. On the other hand, the most recalcitrant creditors are likely to be the ones getting rid of their exposures first. While a shrinking pool of creditors may be hard to avoid, a given proportion of new money may be extracted more easily from the remaining banks. Since a smaller number of free riders helps confine the benefits of new money to those taking part in the rescheduling process, each remaining bank may be willing to contribute somewhat more.

2.8 Concluding remarks

Given the magnitude of the financial problems faced by many LDCs, debt swaps are clearly not a panacea. Still, the debt swaps market serves the useful function of a safety valve, allowing the escape of a few creditors that are likely to be troublesome to the rescheduling process, and provides some desirable flexibility in the design of financing programs suitable for both debtors and creditors. Swaps may also ease foreign exchange constraints (at least for a time), foster privatization, and serve as a signal of the country's willingness to encourage foreign investment. All these advantages, however, are bought at some cost, even though the cost may be postponed in the form of a tighter foreign exchange constraint in the future or concealed in unobserved consequences of preferential exchange rates or a premature repayment of debt.

If the debt swaps market grows far beyond its present size, problems may become more severe, and costs may quickly exceed benefits. The distortions created by the preferential exchange rate and earmarking of foreign exchange could become more pronounced. The advantages of permitting some recalcitrant lenders to exit could be offset by the increased new money responsibilities placed on the remaining banks. Ultimately, a much larger, more active LDC debt swaps market could complicate an already difficult rescheduling and adjustment process without providing overriding benefits for either debtors or creditors.

Footnotes

[1] See W. Ollard, "The Debt Swappers," *Euromoney* (August 1986), 69-77. In March 1987, 28 Japanese banks established a joint factoring company in the Cayman Islands to buy LDC loans from Japanese banks at "fair market value" and to use the interest on and repayments of the loans to pay dividends to the selling banks.

[2] See T. H. Hanley, J. M. Rosenberg, C. A. D'Arista, "J. P. Morgan & Co.—An Analysis of 1986 Earnings Reveals that Fourth-Quarter Results Could Have Been Better," Salomon Bros. Stock Research (January 19, 1987). On May 19, 1987, Citibank announced that it was setting aside $3 billion as loss reserves for its LDC loans and that it would swap some loans for equity. This action was followed by some other U.S. and U.K. banks.

[3] On February 20, 1987, Brazil announced a suspension of interest payments on term bank debt.

[4] The Philippines is a case in point. The country's debt sold for 53 cents on the dollar in the last days of the Marcos regime. Seven months later, the debt commanded 9 cents more after the Aquino government announced a debt-equity program and as the Filipinos came close to an IMF agreement. But when negotiations with commercial banks broke off in November, the price of the debt rose 13 more cents, a 21 percent gain over the September level. Some observers contend that the lack of a specific rescheduling package meant there was less reason to rush to the secondary market to sell Philippine paper.

[5] G. Hector, "The Banks' Latest Game: Loan Swapping," *Fortune* (December 12, 1983), 111.

[6] For the Provida deal, see "Bankers Trust Swapping Chile Debt for Two Firms," *Journal of Commerce* (January 9, 1986), 1A. For the American Express deal, see "Amex Bank Signs Debt-for-Equity Deal With Mexico," *Financial Times* (March 19, 1987), 1.

[7] The recent provisioning by Citibank and other large U.S. banks may change this pattern. Guttentag and Herring explain that, in general, book values are important to banks because of their vulnerability to a loss of confidence. Bank stockholders may see through book values and not want book values to reflect market values, since this would reduce their informational advantage over depositors. Depositors tend to pay attention only to news bad enough to put their claims at risk. Given this one-sided concern with downside risk, a sharp drop in reported earnings due to specific provisioning or loan write-downs could weaken depositors' confidence. See J. Guttentág and R. Herring, "Disclosure Policy and International Lending," *Journal of Banking and Finance* 10 (1986), 75-97. The concern over book values implies that changes in accounting or regulatory rules that affect the recording of LDC loans can significantly alter the willingness of banks to swap or sell such loans.

[8] "Notice to Practitioners on Accounting for Foreign Loan Swaps," *The CPA Letter* Special Supplement (May 27, 1985).

[9] "Mexico Tie to Republic Write-Down," *New York Times* (January 15, 1987).

[10] See, for example, Paul A. Volcker, "Statement before Senate Committee on Banking, Housing and Urban Affairs, February 20, 1985," *Federal Reserve Bulletin* (April 1985), 219; Peter B. Kenen, "A Bailout Plan for the Banks," *New York Times* (March 6, 1983); the speech by U.S. Treasury Secretary James A. Baker III before the Joint Annual Meeting of the IMF and World Bank, Seoul, Korea, October 8, 1985; and the speech by Senator Bill Bradley, "A Proposal for Third World Debt Management," delivered at the Congressional Summit on Exchange Rates, Zurich, Switzerland, June 29, 1986.

[11] R. S. Weinert asserts that Argentina and Venezuela have done so but presents no evidence; see his article "Swapping Third World Debt," *Foreign Policy* (Winter 1986-87), 85-97.

[12] This is consistent with the economic principle that to minimize tax distortion, the goods for which quantities are least sensitive to prices should be taxed the most. One way to set a redemption fee proportional to the discount would be to require a fixed amount of new money or of additional investment for every dollar of face value of debt conversion. Argentina's proposed debt-equity program requires one dollar of new money for every dollar of debt, but 50 cents of that new money is already in the rescheduling package, so only 50 cents more is actually required. This amounts to a redemption fee (paid in the form of new money) equal to one-third of the market discount.

[13] On investment made through a swap, Chile allows no profit remittances for five years and no capital repatriation for ten.

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